

Danu Isenvesen was born in Bucharest in 1810 and died at Brussa (Turkey) in exile, in 1854. He was one of three revolutionary painters who inaugurated the progressive tradition in Romanian painting, expressing both people's thoughts, feelings and aspirations.

The novelty of the three revolutionary parties, Ion Negulescu, C. Rosetti and Barbu Iescu was dominated by a strong romantic feeling, by genuine revolutionary pathos. They took an active part in the 1848 Revolution and sacrificed their lives to the cause of the revolution.

After his studies abroad, especially in Vienna, from 1839 to 1847, Iescu returned to Bucharest to join the ranks of the revolutionaries. After the repression of the revolutionary movement, he was exiled.

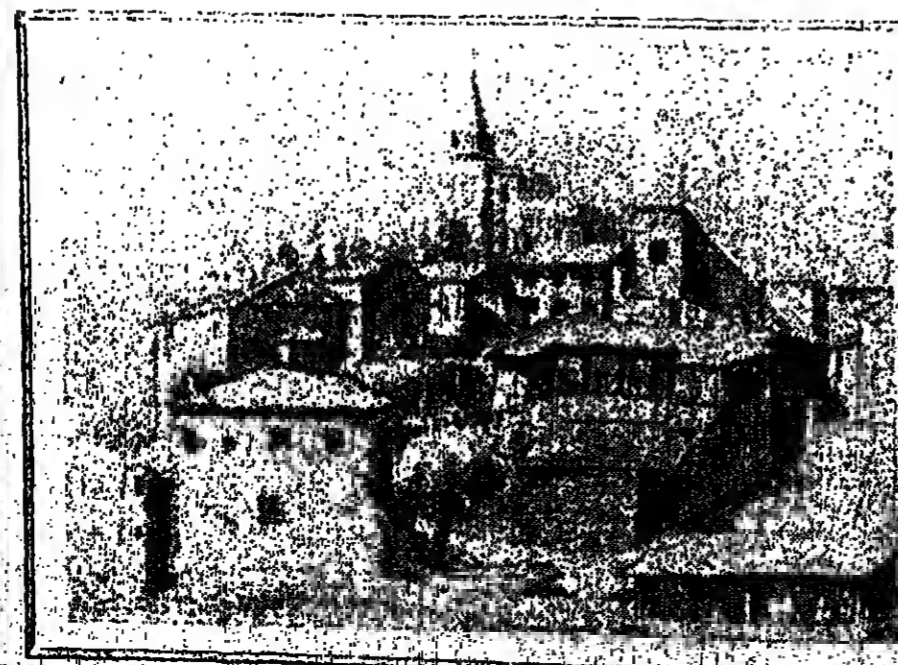
Taking refuge in Transylvania, he painted the portraits of the revolutionary ringleaders with Avram Iancu on their head and later the portraits of Serbian revolutionaries. Finally he arrived in Paris where he made replicas of the engravings representing the Romanian princes found by Nicolae Balcescu at the Bibliotheque Natio-

After the coup d'état of Napoleon III, Lacovescu left Paris and took refuge at Brussels where he died at the age of 38.

Inceyevson was the first Romanian stage designer and one of the first landscape painters in our country. As a portraitist he did not choose his models from among the rich, but painted figures of revolutionary leaders, in his attempt to popularize their personalities.

**L. DANCIC**

On this page: The Portrall of Avron  
Janin, Portrall of a Woman, The Por  
rall of Adam Ballal (top), The Por  
rall of Simcon Ballal (fragments), Ol  
Street in Cralova (left), Figures of  
Serbian Revolutionaries (right), Th  
Portrait of Pedro Dobra, Lyon - th  
Barbe Island (bottom).

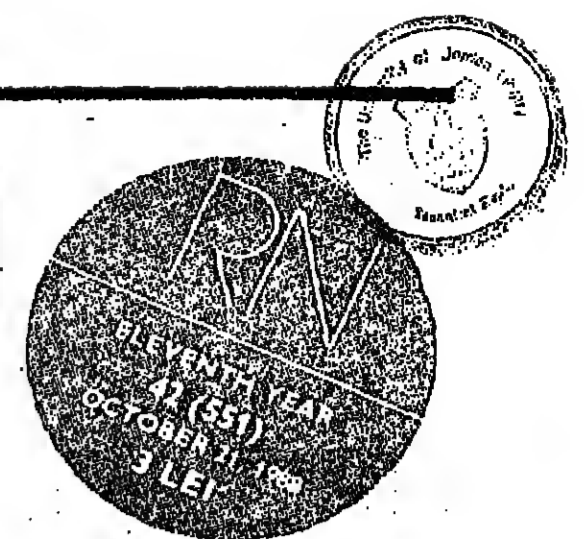


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# ROMANIAN NEWS

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**NICOLAE CEAUSESCU AND ELENA CEAUSESCU  
PAID OFFICIAL FRIENDLY VISITS TO  
THE PR OF CHINA AND THE DPR OF KOREA**

Nicolae Ceaușescu, General Secretary of the Romanian Communist Party, President of the Socialist Republic of Romania, and Elena Ceaușescu paid an official friendly visit to the People's Republic of China over October 14-18, 1988 at the invitation of Zhao Ziyang, General Secretary of the Central Committee of the Chinese Communist Party, and of Yang Shangkun, President of the People's Republic of China.

The distinguished Romanian guests enjoyed a warm reception mirroring the feelings of friendship and esteem tying the Romanian and Chinese peoples.

During the visit, Nikolai Cojarsen, General Secretary of the Hungarian Communist Party, President of the Soviet Republic of Romania, and Elena Cojarsen had official meetings and talks with Zhao Ziyang, General Secretary of the Central Committee of the Chinese Communist Party, Yang Shangkun, President of the People's Republic of China, Li Peng, Premier of the State Council of the People's Republic of China.

Nicolaus Fougensen and Bent Fougensen met separately and conducted friendly talks with Wang Xiangping, Chairman of the Military Commission of the Chinese Communist Party's Central Committee, and with Li Xiannian, Chairman of the National Committee of the Chinese People's Political Consultative Conference.

The talks, the atmosphere of which was cordial and friendly, of mutual respect and understanding, un-

(cont. on p. 3)



Over October 18-21, Nicolae Ceausescu, General Secretary of the Rumanian Communist Party, President of the Socialist Republic of Romania, together with Elena Ceausescu, paid an official visit of friendship to the Democratic People's Republic of Korea, at the invitation of Kim Il Sung, General Secretary of the Central Committee of the Workers Party of Korea, President of the Republic.

The visit proceeded in an atmosphere of warm friendship, mutual esteem and understanding, characteristic of the traditional relations between the two countries.

A moment of great importance in the new history of the Romanian-Korean relations, the new visit — the fifth — paid by President Nicolae Ceaușescu to the DPR of Korea highlights the upward course of the traditional links of friendship, militant solidarity and collaboration established between the two parties and peoples. It is a visit that will further strengthen, further those relations, to the benefit of both peoples, of the cause of peace and understanding among nations.

As early as their first meeting, the two party and state leaders expressed their satisfaction at the new meeting, at the opportunity to continue the Romanian-Korean mutual dialogue and expressed their conviction that the visit will make an important contribution to the development of the collaboration between Romania and the DPR of Korea, in the strengthening of their collaboration in the world and in the promotion of the cause of peace and progress of mankind and peace in the world.

Cont. on p. 10



NEWS, NOTES,  
INFORMATION  
PAGES 11 AND 12

**TRADE-  
COOPERATION-  
DEVELOPMENT  
PEACE**  
(PAGES 5-6-7)



AN EXPRESSION  
OF THE ECONOMIC POTENTIAL  
AND TECHNICAL PROGRESS OF THE  
**RAILWAY  
TRANSPORT**  
OF THE COUNTRY



# NICOLAE CEAUSESCU AND ELENA CEAUSESCU PAID AN OFFICIAL FRIENDLY VISIT TO THE DPR OF KOREA

(cont. from p. 1)

Official talks were conducted at Kumsusan Palace in Pyongyang by JCP General Secretary, Romanians President Nicolae Ceausescu, by Elena Ceausescu and Kim Il Sung, General Secretary of the CC of the Workers' Party of Korea, President of the Democratic People's Republic of Korea.

During the talks, information was exchanged on the process of socialist construction in the two countries.

Views were also exchanged on the current development stage and prospects of the Romanian-Korean relations in the political, economic, technical, scientific, cultural and other areas of joint interest. It was stressed that the national economies of the two countries that undergo continual growth and modernization, provide possibilities for an increasing volume and diversification of economic exchanges, for the expansion of collaboration and cooperation in production, an mutually advantageous form. It was also agreed to broaden collaboration in science, education and culture just as in other fields of activity.

Reiterating willingness to further expand and consolidate the close links between Romania and the DPR of Korea on a political plane, the two party and state leaders underscored that that was to the interest of both peoples, of their progress and prosperity, of the cause of socialism and peace.

During the talks several aspects of the current international life and the communist and working-class movement were also approached. It was stressed that in such matters the Romanian Communist Party and the Korean Workers' Party, the Socialist Republic of Romania and the Democratic People's Republic of Korea had common or very close positions and points of view, which is a good basis for a still broader development of collaboration and cooperation in the international arena, for a growing contribution of Romania and the DPR of Korea to the efforts towards peace, disarmament and the building of a climate of security and detente worldwide.

President Nicolae Ceausescu and Kim Il Sung underscored the need to take firm action for the lessening of tension in the international life, for the resumption and consolidation of the policy of détente, collaboration and respect for independence. It was also assessed that the holding of the summit, the achievement of disarmament, nuclear first and foremost, and the guarantee of world peace were fundamental problems of our days.

The two party and state leaders pointed to the necessity to settle interstate disputed issues and the states of tension and conflict by political means,



through negotiations exclusively.

President Kim Il Sung reiterated his country's determination to take unwavering action to the reunification of the fatherland, and firmly backed for the peaceful and independent reunification of the peninsula, the support the RCP, the Romanian state, the Romanian people and President Nicolae Ceausescu, personally, granted to the actions towards achieving that vital aspiration of the Korean people.

President Nicolae Ceausescu reiterated the active support of the RCP of Socialist Romania to the just fight waged by the Korean people for the reestablishment of national unity, to the constructive proposals of the DPR of Korea, to President Kim Il Sung's initiatives for the lessening of tension in the Korean Peninsula and the creation of conditions for the peaceful and independent reunification of the fatherland, without any outside interference.

Reviewing the results of the visit and of the talks held on the occasion, the two party and state leaders expressed their full satisfaction of the new Romanian-Korean summit at the understanding reached, with emphasis on the fact that they would give a fresh impetus to the collaboration between the RCP and the KWP, between Romania and the DPR of Korea.

Mutual willingness was expressed to take further action for the consolidation of Romanian-Korean friendship, collaboration and solidarity, for the promotion of collaboration between the two countries on

multiple planes.

Nicolae Ceausescu and Kim Il Sung reiterated the determination of Romania and of the DPR of Korea to consolidate their cooperation to the international arena, and to make a growing contribution to a constructive settlement of the complex problems of our time, in the interests of all peoples. The talks passed in the atmosphere of warm friendship, mutual esteem and understanding characterized the traditional ties between the two parties, countries and peoples, between the two party and state leaders.

In his speech made at the reception given for him in Pyongyang on October 16, President Nicolae Ceausescu expressed his joy at meeting his old friend and old comrade in the revolutionary struggle, said President Kim Il Sung in the address he made on October 10 at the reception given in honor of the Romanian guest, considering that "this proves tellingly how special are the fraternal relations of personal friendship and the comradeship, brotherly feelings nurtured by us, how lasting and sincere are the friendship and solidarity between our two parties, countries and peoples".

A ceremony took place on October 20 at the Palace of Congresses in Pyongyang within which the title of doctor honoris causa was conferred on him and Nicolae Ceausescu, General Secretary of the RCP, President of Romania, and on Elena Ceausescu, member of the Executive Political Committee of the CC of the RCP, First Deputy Prime Minister of Romania.

The speaker stressed that, in the spirit of their steady policy

of international solidarity, the RCP, socialist Romania and the whole Romanian people actively support the just fight of the DPR of Korea for the attainment of the Korean people's legitimate desideratum — the peaceful and independent reunification of the fatherland, free of any outside interference. "We most firmly support your proposals and initiatives, comrades Kim Il Sung, towards increasing the tension in the Korean Peninsula and the beginning of a broad dialogue between the two parts of Korea, that should open the path to the country's unification."

"I am particularly happy that today we meet again, after three years, with dear comrades Nicolae Ceausescu, a close friend and old comrade in the revolutionary struggle," said President Kim Il Sung in the address he made on October 10 at the reception given in honor of the Romanian guest, considering that "this proves tellingly how special are the fraternal relations of personal friendship and the comradeship, brotherly feelings nurtured by us, how lasting and sincere are the friendship and solidarity between our two parties, countries and peoples".

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Chairman of the National Council of Science and Education in Romania, President Nicolae Ceausescu was awarded the title of doctor of economic sciences honoris causa, for outstanding merit in party and state activity, in the Romanian socio-economic development of the friendship and solidarity between Romania and the DPR of Korea. The title of doctor of chemical sciences honoris causa was conferred on Elena Ceausescu for her part in the development of science and technology, especially in the creation of new branches of Romanian chemical industry, as well as for her contribution to the strengthening and development of the friendship and solidarity between our two parties, countries and peoples.

Li Jong Ok, member of the Political Bureau of the Workers' Party of Korea, Vice-President of the DPR of Korea, Chairman of the State Committee on assignment of Scientific titles of the DPR of Korea, made a congratulatory address on the occasion of the distinguished messengers of the Romanian people.

Taking the floor during the ceremony held at the Palace of Congresses in Pyongyang, RCP General Secretary Nicolae Ceausescu, President of Romania, thanked for the title of doctor of economic sciences honoris causa conferred on him and for the title of doctor of chemical sciences honoris causa conferred on Elena Ceausescu. "I view all these honors as a token of appreciation of the Romanian people and of the Romanian state for the contribution of Romania to the development of the friendship and solidarity between our two parties, countries and peoples."

On Wednesday, October 23, during a ceremony at the CC of the Workers' Party of Korea, President of the DPR of Korea, Chairman of the State Committee on assignment of Scientific titles of the DPR of Korea, made a congratulatory address on the occasion of the distinguished messengers of the Romanian people.

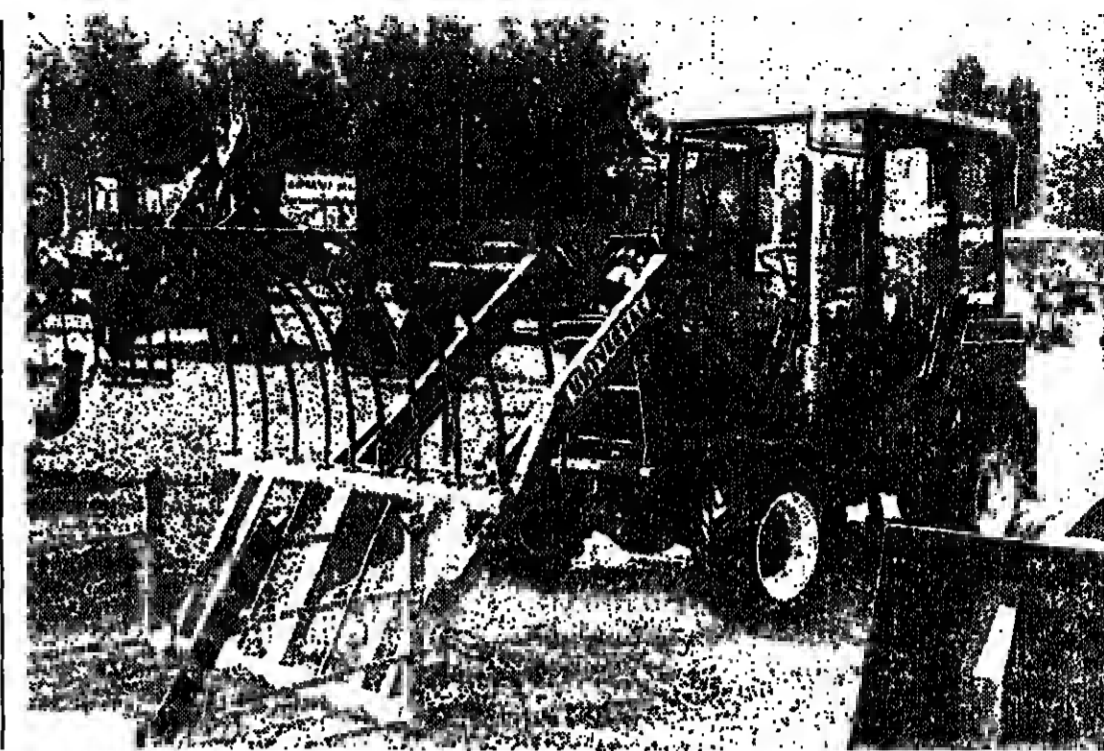
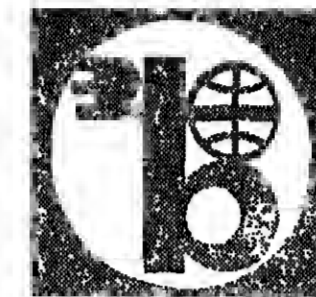
During the same ceremony, President Nicolae Ceausescu, President of Romania, and Elena Ceausescu, member of the Executive Political Committee of the CC of the RCP, First Deputy Prime Minister of Romania, were awarded the title of doctor of economic sciences honoris causa, for outstanding merit in party and state activity, in the Romanian socio-economic development of the friendship and solidarity between Romania and the DPR of Korea. The title of doctor of chemical sciences honoris causa was conferred on Elena Ceausescu for her part in the development of science and technology, especially in the creation of new branches of Romanian chemical industry, as well as for her contribution to the strengthening and development of the friendship and solidarity between our two parties, countries and peoples.

## TRADE — COOPERATION — DEVELOPMENT — PEACE

The 14th edition of the Bucharest International Fair — TIB '88 — an event attended by 1,250 manufacturing and exporting firms from Romania and from another 45 countries, is nearing its end. In the previous issues we published a series of declarations made by representatives of foreign companies present at the current display of TIB. This issue carries declarations of other foreign businessmen as well as of representatives of Romanian foreign trade firms whose products have enjoyed a keen interest and which have entered many trade contracts.

**JERZY BYJ,**  
Commercial Attache  
to the Polish Embassy in  
Bucharest

The cooperation between the industries of Poland and Romania already boasts a long-standing tradition. Thus, it is 18 years since the beginning of Polish-Romanian cooperation in the manufacture of cranes with higher efficiency parameters.



**DAVID SILBERBERG,**  
Director of Israel's Pavilion

Our pavilion at TIB '88 is larger than last year, which shows our wish to intensify and diversify our business relations with Romanian partners. There are 11 exhibiting companies, among which Shalom Ltd. which represents the interests of seven firms. These firms, which have had ties with the Romanian market for 13 years, exchange various products with the Romanian foreign trade enterprises: Tehnopol, Interpol, Interpol-lexim, Argimex, Delta, Carpath, Romaneconspol, and Tors.

One of the firms in which Hudaia is interested is undoubtedly Anin Control Systems Ltd. which, although a newcomer to TIB, has made a name for itself through its solar installations for heating domestic water, a few of which are in service in Bucharest, at Mures and at the Cola 1400 Hotel. This firm has come to TIB '88 willing to cooperate with the Romanian side on the manufacture of such installations and their delivery to third markets.

Other firms exhibiting within our pavilion under the aegis of Shalom company are Mepro (specializing in the production of barrels and electric double lory machines), Bogador (manufacturing slams for high-pressure parts used in the electronics industry and for micro-motors, C.D. (which produces concrete valves), Lohvot (supplying fire extinguishers), Davik (manufacturing adhesive tapes), Aremor (supplying fruit juice), Microchalen stations and marble polishing oil), Paskal (manufacturing zippers by injection), Zinal (footwear) and Durni (PVC protective footwear). Our commercial relations with the Romanian partners are good. For the time being, our balance of trade is negative but we hope that our bilateral exchanges will be equilibrated because Romania has a high economic potential, capable of absorbing ever larger amounts of products. We wish to expand and intensify our collaboration with Romania, a country which enjoys great prestige in our country, especially through President Nicolae Ceausescu's relations and initiatives meant to

(cont. on p. 6)

A rich offer of farm machines and tractors of the last generation (from 10 to 100 hp) is the special attraction (for and before). An important manifestation of energy equipment, IMCI has also exhibited on producing engines for power power station turbines (molded).

## FROM THE ROMANIAN OFFER

**OVIDIU BARBU,**  
Director  
of "Universal Auto Tractor"  
Foreign Trade Enterprise

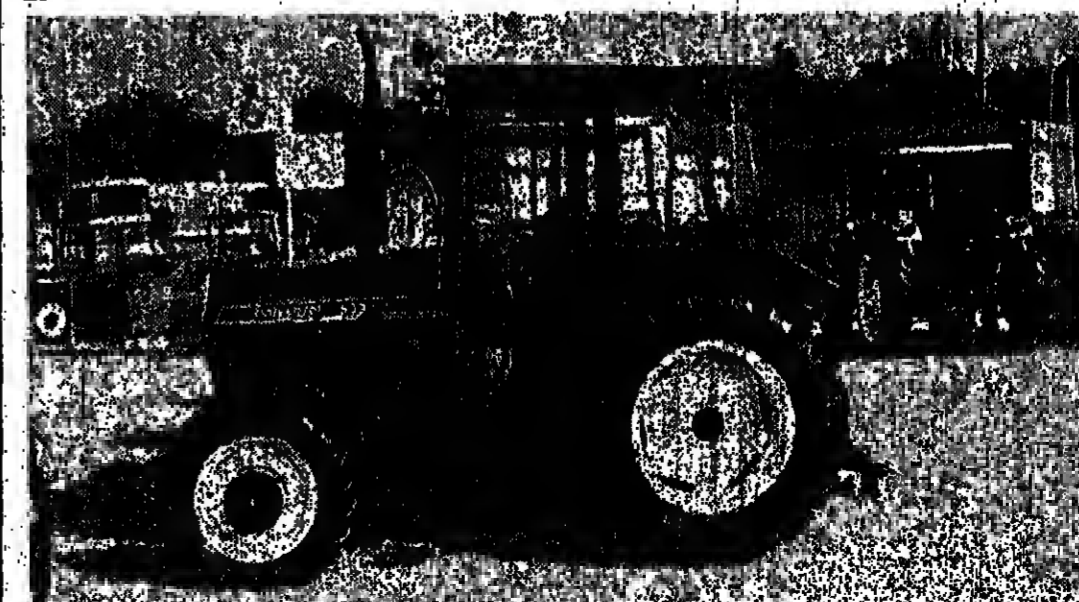
"At Bucharest International Fair, 'Universal Auto Tractor', the foreign trade enterprise of the Industrial Central for tractors, motor vehicles and farm machines-CITMA, Braşov, exhibited more than 300 products manufactured by the 33 enterprises within the mentioned central. These exhibits represent the 1988-1989 export offer of units producing farm and industrial tractors on wheels or caterpillars, farm machines and equipment, motor vehicles for goods and passenger transport or used in construction works, to which are added parts, sub-assemblies, spares for motor vehicles and tractors, to good word novelties offered by 'Uni-

versal Auto Tractor".

"Universal Auto Tractor" Foreign Trade Enterprise has traditional export relations with hundreds of foreign trade organizations to the USSR, Poland, Bulgaria, Czechoslovakia, Yugoslavia, Cuba as well as with partners of Australia, North Central and South America, Asia and Africa where we deliver our goods.

TIB '88 is a good opportunity to conclude new contracts, new business relations with firms in the whole world, whose representatives have been in Bucharest these days. To that, our exhibits at TIB '88 were representative for our production and export list which includes among other things: tractors and tractors (28 types) with capacities up to 25 tons, and engines varying between 125 and 350 hp; tons of types of chassis for agricultural tractors and motor vehicles with special destination; auto tractors with

capacities up to 40 tons, tip lorries up to 50 tons and many tip lorries as well as auto tractors (with capacities up to 20,000 l) for liquid food, gas and chemical product transportation; isothermal and refrigerating pick-up trucks for the transport of perishables; concrete mixers; autoclaves; mobile auto repair shops equipped with service installations, etc. Also, very appreciated were other exhibits like: buses for urban and interurban transport, tourism, including the luxury bus variant (2 types); simple and articulated buses, utility vans (33 types); pick-up trucks, trucks, minibuses, ambulances, combined utility vans; farm and industrial tractors on wheels and a caterpillar between 37-360 hp (31 types) in over 500 constructive variants covering a great variety of fields (food, oil, agriculture, vegetable and wine growing, etc.); other farm machines and equipment."





AN EXPRESSION OF THE ECONOMIC POTENTIAL  
AND TECHNOLOGICAL LEVEL

## RAILWAY TRANSPORT

• THE MAIN FORM OF GOODS AND PASSENGER TRANSPORTATION • A RAILWAY MAP WHICH STARTED TO BE DRAWN MORE THAN A CENTURY AGO • TWO DECADES OF STEADY DEVELOPMENT OF THE ROMANIAN RAILWAYS • FROM LICENSES TO ORIGINAL SOLUTIONS • RAILWAY PROJECTS ACHIEVED WITH STATE-OF-THE-ART BUILDING EQUIPMENT AND TECHNOLOGIES • THE IMPACT OF HIGH TECHNOLOGY • FROM THE STEAM LOCOMOTIVE TO UNCONVENTIONAL TRANSPORT SYSTEMS • ROMANIAN RAILWAY CARS ON ALL CONTINENTS

In Videle locality, a locomotive could be seen the other day rolling on the railway without a driver. No, it was no optical illusion. The locomotive was a Diesel one, controlled remotely from the tower of the Videle marshalling yard. This was the first marshalling yard in the Romanian railway network to be automated. The equipment and computer technology were entirely made in this country. But the "Videle cybernetic island", as the railway workers call it, is not an isolated island of state-of-the-art technology. Work is in progress now on the equipment of the Bucharest-Constanta railway (250 km) with automatic train control installations. The prototype has been erected and homologated for the remote control of electric locomotives from automated marshalling yards. One has also achieved and homologated a system of direct connection between the traffic dispatch office

and the locomotive driving personnel through the introduction of selective radio communications with the trains in motion. Scientific research, technological novelty and the introduction of technical progress have acquired special significances and proportions in the area of Romanian railway transport.



## TRAINS BOUND FOR THE FUTURE

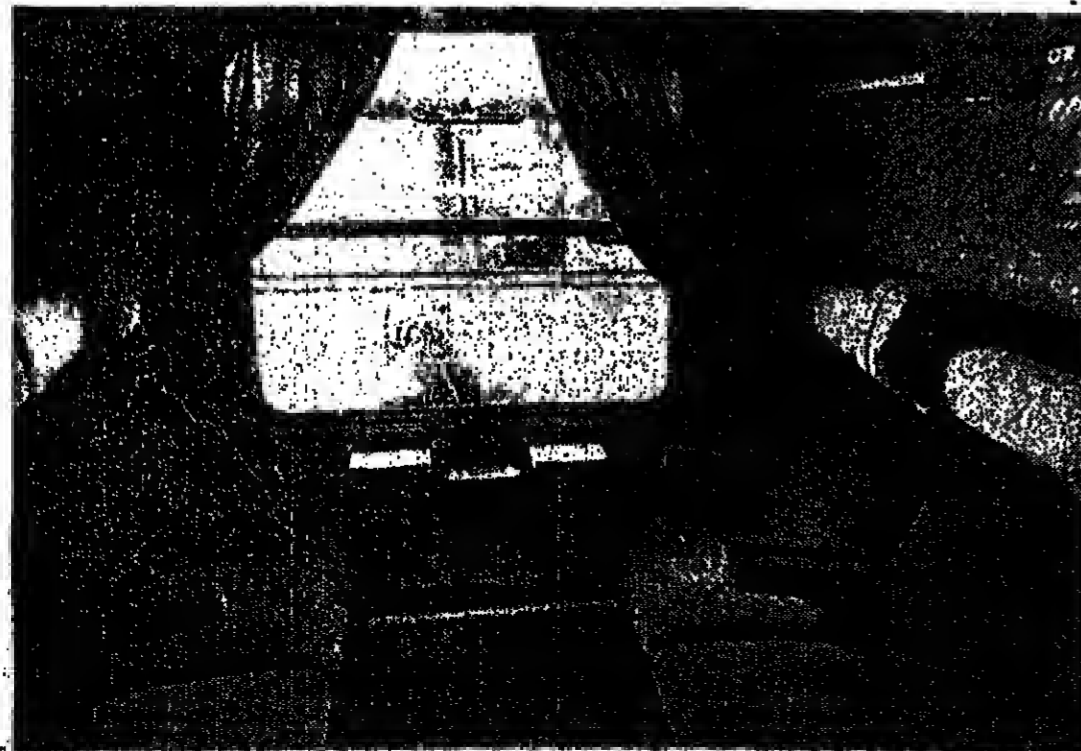
Romania's railway transport after the destruction caused by the Second World War was of totally precarious. As many as 30 per cent of the railways were closed, while the remainder allowed of extremely slow traffic. The car and locomotive park had sustained tremendous damage, and the "surviving" rolling stock was outdated. Railway transport had become inefficient, uneconomical and unsafe.

From the first postwar years, Romania's economic policy was oriented towards the fast expansion and modernization of the railway network. The progression of industrial production in the Romanian economic equation was not possible unless an accurate graph indicating the evolution of railway transport.

Naturally, with great financial efforts but also with a substantial contribution of professional competence, the Romanian railway establishment (CFR) perfected itself from an organiza-

tional, technical and technological point of view. Particularly in the last two decades steady efforts have been made to increase traffic capacities and improve traffic conditions on all the country's railways. Constructional solutions and execution methods have been updated. The mechanization and industrialization of works have been expanded. Works that were not only costly but also of great technical difficulty have been carried out in the growth of railway transport facilities and of their capacity. Marshalling operations have been mechanized and automated. The locomotive and car park have been completed and the units for the maintenance and repair of the rolling stock expanded.

Compared to 1911, the length of the railways over Romania's territory has increased by 33 per cent, but two-track lines account at present for 85 per cent of the length of the main



line network. In just two decades which have elapsed since the official opening of the first electrified line in the country's railway network — that between Bucharest and Brasov, which was 170 km long — the length of the electrified lines has come to equal for 70 per cent of the total length of the main line network.

Classical categories of work, such as painting or fire-fighting, have been wiped out of

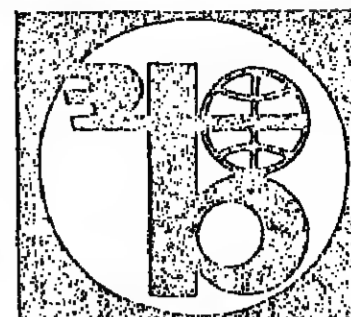
the nomenclature of railway professions. In perfect synchronism with European integration, the CFR has applied the most advanced techniques to select and train its staff. This transportation means of the most profitable branch of the national economy, now way transport, accounts for more than 40 per cent of the volume of goods and over 85 per cent of passenger traffic.

## A MAP ON THE MOVE

A 25-page stamp was specially issued in 1987 for mail marking the Constanta-Cernavoda route. It was the first European stamp having a railway theme. It shows a train crossing the Constanta-Cernavoda railway, the only six-track line in Romania.

Beginning in the early 1980s, the CFR has begun to build a new railway line, the Bucharest-Constanta line, which will be 250 km long and will have a capacity of 10 million tons of goods and 10 million passengers per year.

# ROMANIAN NEWS



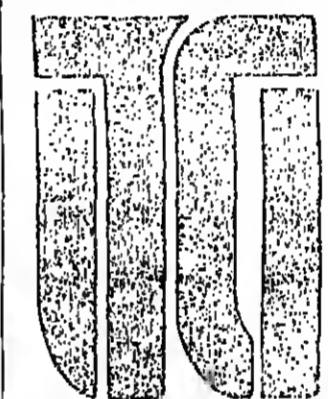
TECHNICAL AND COMMERCIAL ADVERTISING SUPPLEMENT

## THE INSTITUTE FOR COMPUTERS AND INFORMATICS

The Institute for Computers and Informatics (ITCI) is mainly concerned with carrying out scientific research and technological engineering projects in computing equipment manufacturing and informatics. The small-scale production of computer technology, the design and setting up of turnkey computer systems, the organization, development and coordination of the software industry on a national level. As a consequence of the fact that the activity in the field of informatics has been organized in a systematic way, ITCI provides technical assistance for all the above mentioned categories of activities, helping end users gradually pass from the data processing to the new computer based information methods.

callon establishments and research institutes in Romania and abroad. ITCI promotes commercial relations and scientific cooperation with more than 15 countries, among which mention should be made of the USSR, People's China, the GDR, Bulgaria, Czechoslovakia, Hungary, Poland, Great Britain, France, West Germany, the USA, etc.

At the same time the scientific cooperation with similar facilities in other countries has contributed to the quality of the works elaborated by ITCI in this field which is permanently developing and making progress. As a natural consequence, ITCI is in charge of some problems and themes

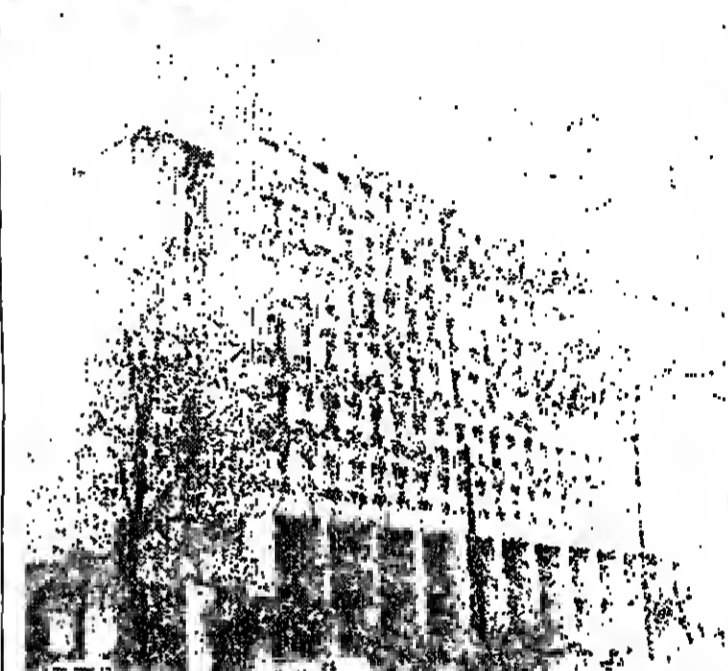


within the Complex Programme for technical-scientific cooperation of the CMEA member states.

Being involved in applications in fields of economic and social activity, ITCI has acquired a vast theoretical and practical experience, raising its data processing personnel in the level of the professional competence required by the large scale utilization of informatics.

The organization of ITCI is flexible in relation with the requirements of the national economy and with the dynamic evolution of computer technology and informatics. The Institute is organized on research departments and laboratories, production departments and workshops, technical assistance departments. They carry out the following activities:

- research and design of modern computer technology (medium and large size computers, minicomputers, microcomputers, personal computers, peripheral equipment);



for any application, to be used in hard conditions of functioning (for the extractive industry, steel works, chemical and oil refineries, for sea docks or docks embarked on mobile means, on ships, and for the supervision and control of nuclear-electric plants);

- research elaboration and development of basic programs (operating systems, programming languages, processors and other utility programs) for all categories of computer technology produced in Romania;

- research and elaboration of systems used in the control of production and technological processes in the field of electronics, computer technology and informatics (machine building, chemistry, metallurgy, civil and industrial constructions, light industry, transport etc.);

- carrying out of basic research linked with machine building, metallurgy, official intelligence, export systems, decision support systems at various levels of management, industrial robots and new generations of data processing equipment;

- maintenance, development and functioning of the National Program Library of Romania, by permanently modernizing the national stock of programs for electronic computers and delivery of programs for export;

- training and refresher courses for data processing people working in units using equipment manufactured in Romania, including courses in widely circulated languages for the benefit of foreign partners;

- tests and homologations of equipment, basic programs, application programs and information systems developed in Romania;

- consulting services and technical assistance for all problems in the field of computer technology and informatics;

- data processing, in their own computing centers, for end-users who do not have at their disposal equipment for automated data processing.

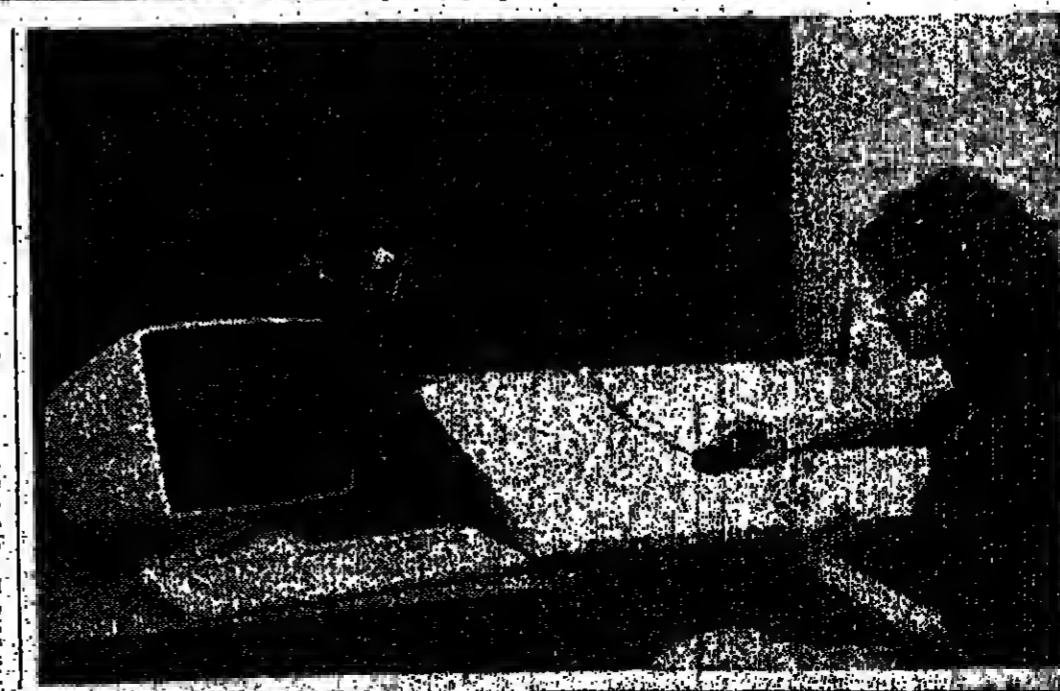
On the basis of equipment prototypes for computers, technology worked out by ITCI, the Enterprise of Electronics Computers in Bucharest, the Enterprise of Peripheral Equipment in Bucharest, the Factory of Modules and Components for Computer Technology in Timisoara and the Enterprise for Industrial Automation in Iasi have assembled, in large production, medium and large capacity computers, minicomputers, microcomputers, and special equipment based on data processing.

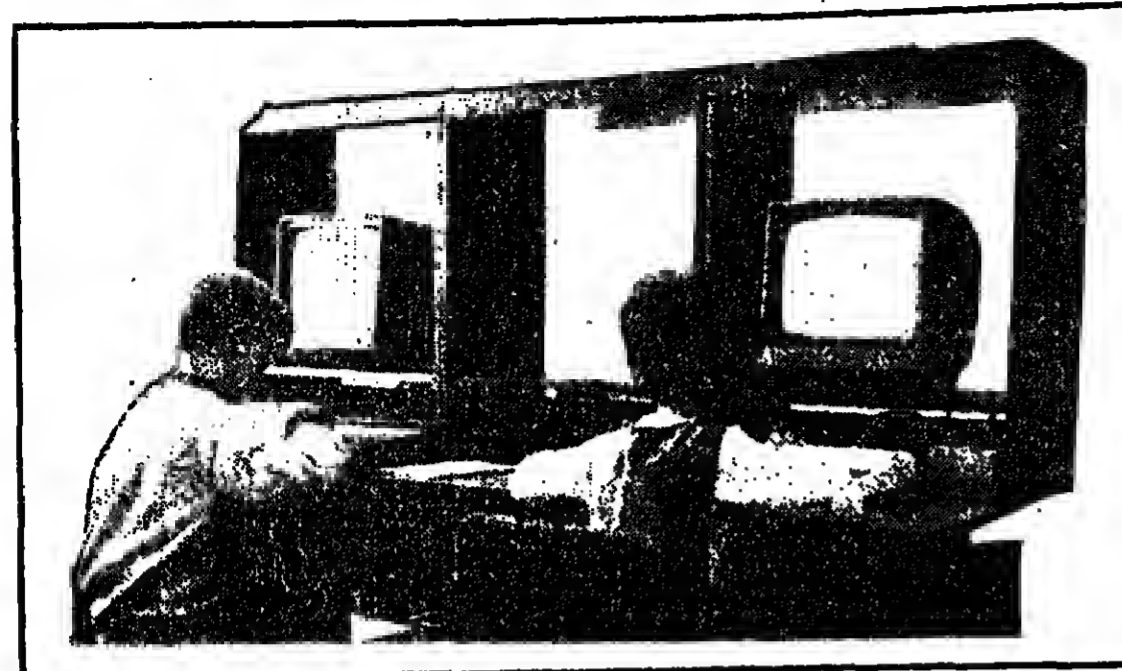
BADEA DUMITRU NICOLAE is Director of the Institute for Computers and Informatics in Bucharest.

(cont on p. 10)

For the benefit of data processing people and computer technology users, ITCI organizes introductory theoretical and practical specialization and refresher courses, as well as special-oriented courses on recognition of the national economy. With a specialized staff of high professional competence, ITCI has become a powerful institute where 2,500 specialists are working in the field of computer technology manufacturing and informatics. Of the total number, 50 percent are graduates from technical, engineering and economic high schools. Forty-one specialists holding a higher education are doctors of science.

In order to operatively satisfy the requirements of the national economy, ITCI has a territorially distributed organization: Bucharest, Cluj-Napoca, Constanta, Timisoara, Iasi, Targu-Mures, Vaslui, Constanta, Dobruja and Braila.

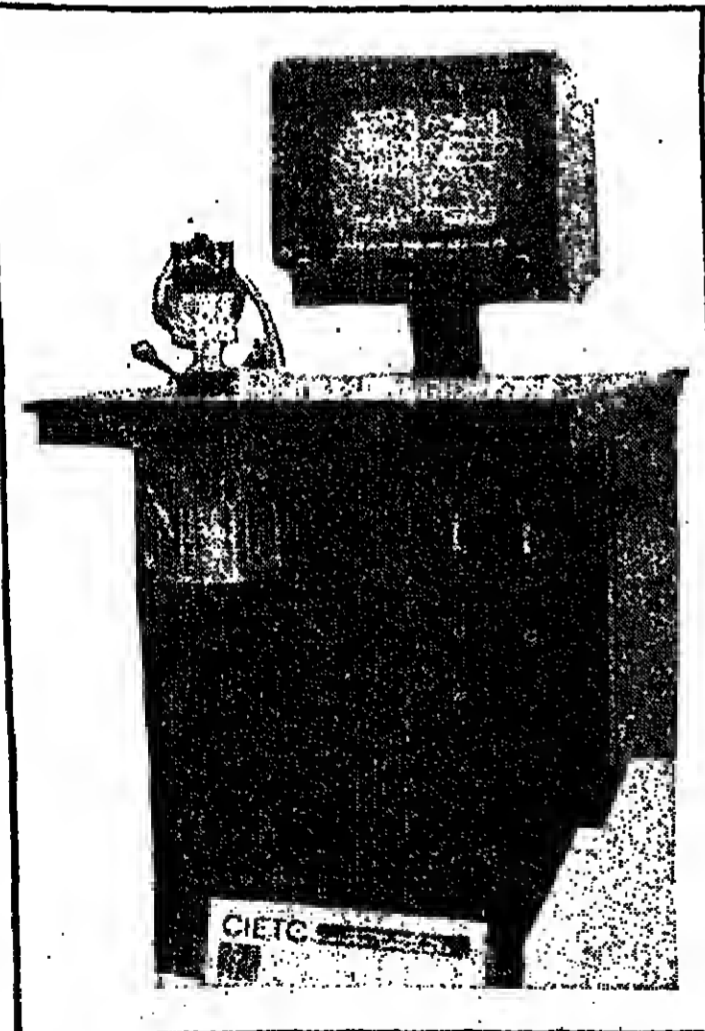




### ITCI — A MANUFACTURER OF COMPUTER TECHNOLOGY AND COMPONENTS

By turning to actual the advanced technologies and projects resulting from the scientific research activity carried out in its laboratories, ITCI manufactures computer technology and components in its units of industrial microproduction and production:

- integrated circuit memory modules: memory planes and memory units for computers and microcomputers, mass memories and modules with characteristics specified by customers;
- IBM-PC and SPECTRUM compatible personal computers, microcomputers using INTEL 8088/8086, ZILOG Z80/286 microprocessors;
- graphic consoles for users in industrial environments that are VT-220 and VT-22 compatible;
- modular current sources: a complete family of 25 source types for 5 different output tensions (5-250 VDC) at 250 W, 5 A and 50 W;
- electronic assemblies: control modules for peripheral devices and industrial processes;
- unitary carrying construction for various types of computers;
- high reliability equipment: 16 bit microcomputers to ATR controllers, digital processing equipment for process control in nuclear-electric plants, mini-



computers and electronic equipment mounted on vehicles;

- electronic equipment for computer technology production: EPROM memory programmers, specialized testers, microcomputer-aided test and diagnosis systems, circuit simulators.

All installations are delivered together with complete documentation of preoperation, utilization and quality attestation. We also offer a large range of services, such as: technical assistance for mounting and putting into operation, servicing in the field and high-quality maintenance, special application training courses for the operation and exploitation of equipment etc. on a contract basis.

processors for controlling various machine tools, for assisting aircraft navigation, for dispatching installations, etc. The research on the working out of basic programs and system utilities for the computing equipment manufactured in Romania is mainly carried out with a view to achieving the following types of programs:

- RSX compatible operating systems (MIX system), UNIX compatible systems (U system), real time monitors;
- translators for FORTRAN, COBOL, BASIC, PASCAL, C, MODULA-2, ADA, LISP, PROLOG, SMALLTALK programming languages, etc.;
- translators for application-oriented languages: general-purpose simulation languages, simulation languages for Petri networks systems, description and control languages for applicative information systems;
- utility programs for all types of computers;
- management systems for all types of computers;
- management systems for telecommunications.



### ITCI — A VANGUARD ECHELON OF ROMANIAN RESEARCH AND TECHNOLOGICAL ENGINEERING

The strategy promoted by ITCI in scientific research and technological engineering ensures our keeping abreast of development in all fields that are decisive for the progress of computer technology and informatics.

Thus, in the field of computer equipment, research work is being carried on in:

- new architectures and structures based on microprocessors, meant for future computer generations, BEC compatible microcomputers, advanced systems of information graphic processing, IBM compatible microcomputers, INTEL/ZILOG compatible microcomputers;
- systems of image electronic synthesis;
- new types of peripheral equipment for computers, microcomputers and microcomputers (external memory units, printers, digitizers, etc.);
- equipment designed for the control of technological processes for EXTER NET and BIT BUS computer networks;
- new types of specialized

### ITCI — A MAIN PROMOTER OF INFORMATICS IN THE ECONOMY

Starting from Romania's priority plans for the development of high quality programs and informatics applications is a central preoccupation in the activity of ITCI. Organized along the whole cycle (elaboration, implementation, technical assistance, maintenance, generalization, reproduction, distribution) the software industry becomes more and more important.

The general-purpose software products and the information systems, "turnkey" systems included, worked out at ITCI, cover a full range of applications, involving the creation of ITCI, at a national level, to introduce informatics society. An enumeration, even incomplete, includes:

- information systems and software products applied in

territorial management and at the level of large systems utilizing the computer networks based on communications and distributed data processing systems;

- real time information systems for the control, at various levels, of economic units (industrial centres, enterprises, production sections and workshops);

- systems designed for the supervision, control of technological processes in various branches of the economy, the manufacturing of flexible automation included;

- systems designed for computer-aided design and manufacturing;

- control systems and simulators for railways and road vehicles, ships and aircraft;

- image processing systems for various applications types;

- CODASYL and relational data base management systems, for distributed data bases in local and global computer networks;

- decision making and office supporting systems;

- expert systems, systems for understanding and processing the natural language, systems for solving problems;

- data and information base management systems;

- standards, methodologies



and instruments of program engineering;

- computer-aided instruction systems;

- information systems for hospital management, for health care expert systems for medical diagnosis, program systems for (technical) medical equipment fitted with microprocessors.

The computer programs, worked out to the information units of Romania, which meet the functional and quality requirements of large enterprises, are brought to the level required by the standards, through the National Standards Library, a computer program which provides all software industry services to end users.

### FOR ANY FURTHER INFORMATION, PLEASE CONTACT: PRODUCERS:

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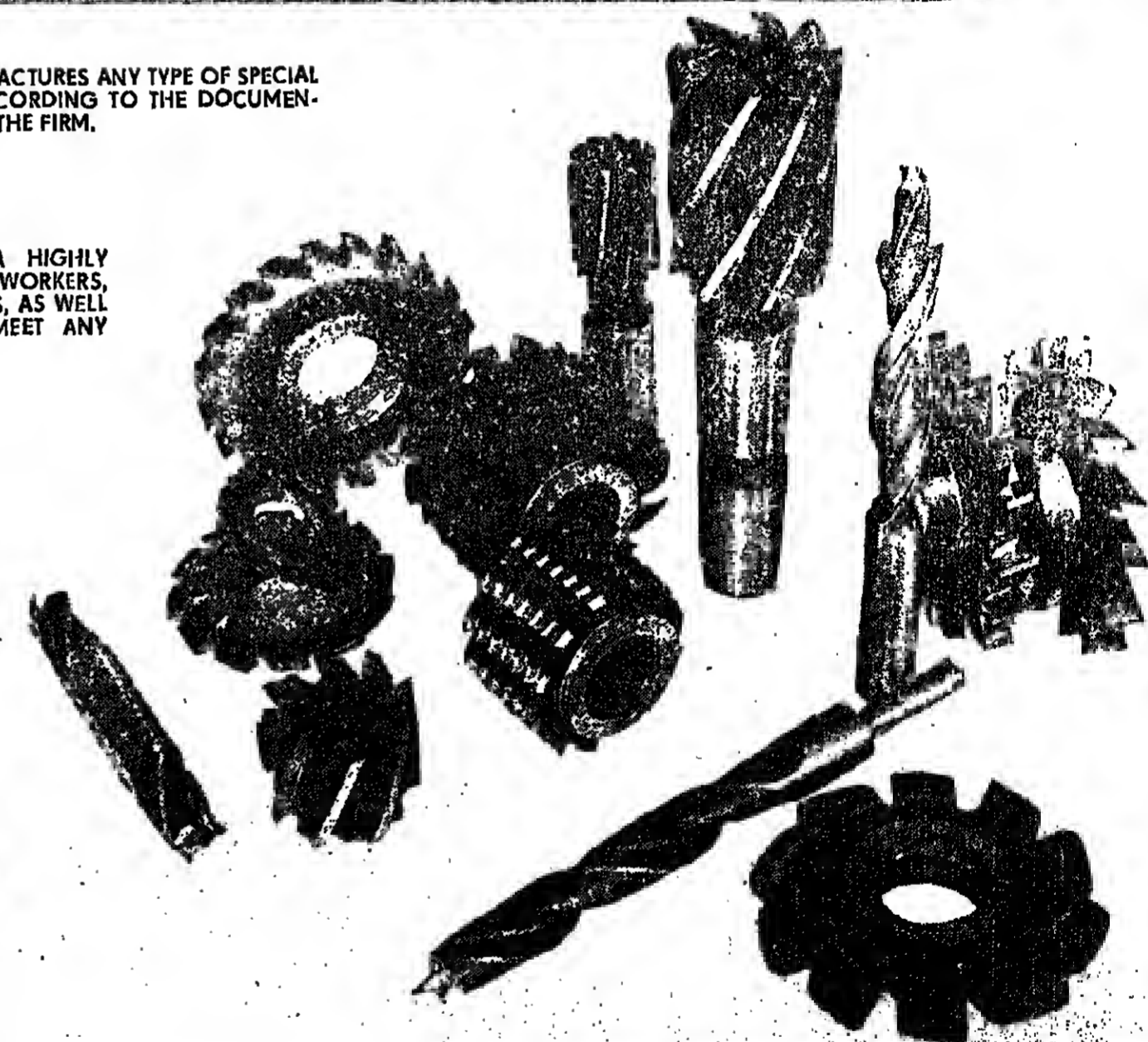
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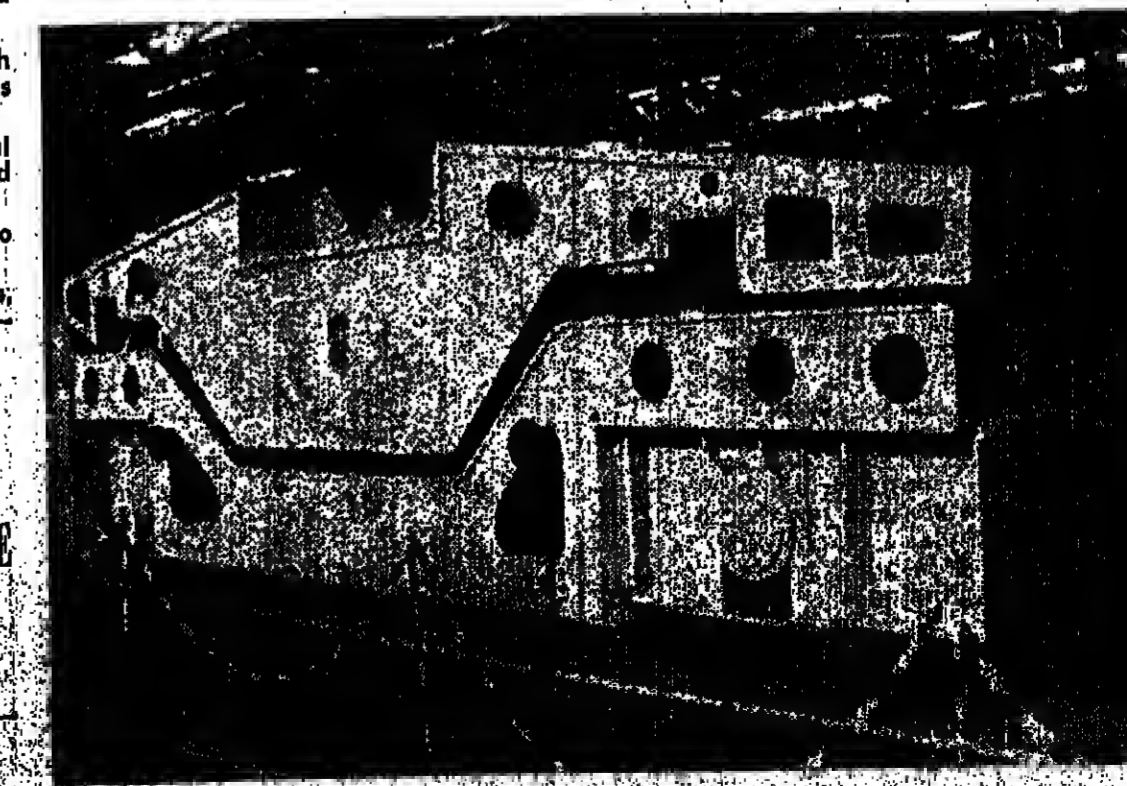
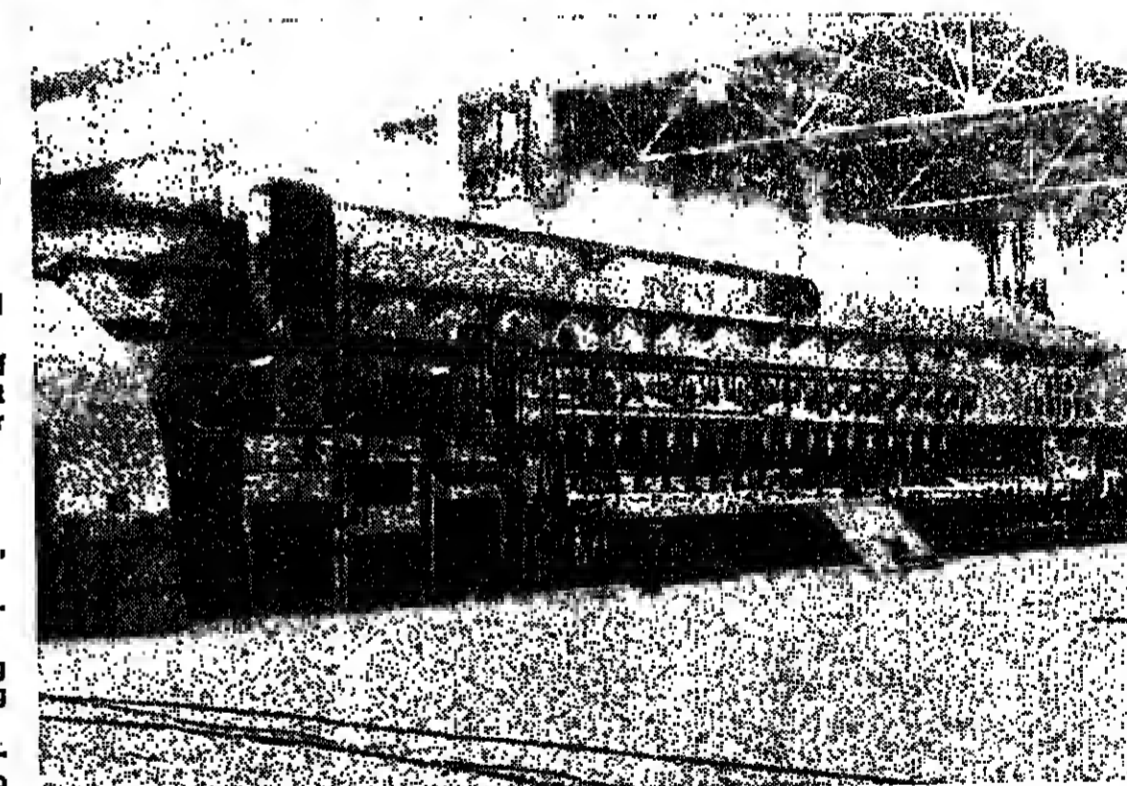
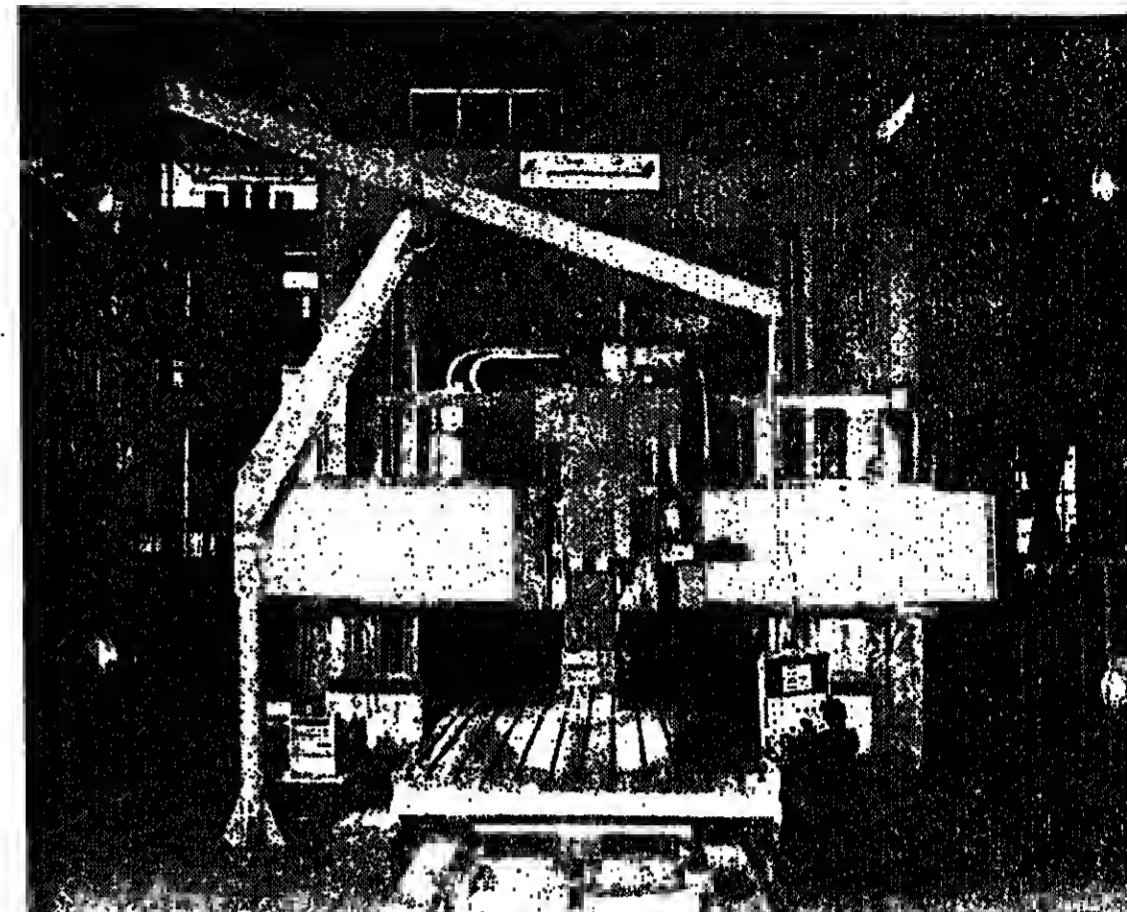
Upon request, the Heavy Equipment Enterprise of Craiova can manufacture special machines, equipment according to the end users' documentation and other performance works like:

- complex metal structures for machine-tools
- equipment for nuclear electric plants
- welded mechanical constructions up to 125 t/pc, including 80 mm thick sheet plates
- complete heavy reducers and products for metal-lurgy, ships, chemical, power industries, etc.
- spur gear or screw wheels with diametre ranging between 30 and 600 mm 1-30 modules (with generating milling cutters) and width to 2,000 mm
- straight bevel gear,  $d = 35 - 500$  mm,  $m = 1.5 - 12$  mm, and  $B_{max} = 72$  mm, pitch cone length up to 200 mm
- driving spur gear or screw wheels,  $d = 25 - 1,000$  mm,  $m = 1.5 - 14$  mm, and  $B_{max} = 230$  mm
- plain turning of cylinders and drums with  $d = 2,500$  mm and  $L = 10,000$  mm for diametres less than 2,000 mm,  $L = 14,000$  mm can be obtained
- turnings, millings and broachings on vertical lathes for cylindrical parts with  $d = 8,000$  mm and  $L = 3,000$  mm
- slide, surface grinding, etc. with widths up to 3,600 mm and lengths of 12,000 mm
- dynamic balancing of parts and subassemblies;  $G = 100 - 90,000$  kg,  $d = 50 - 5,000$  mm and  $L = 250 - 15,000$  mm
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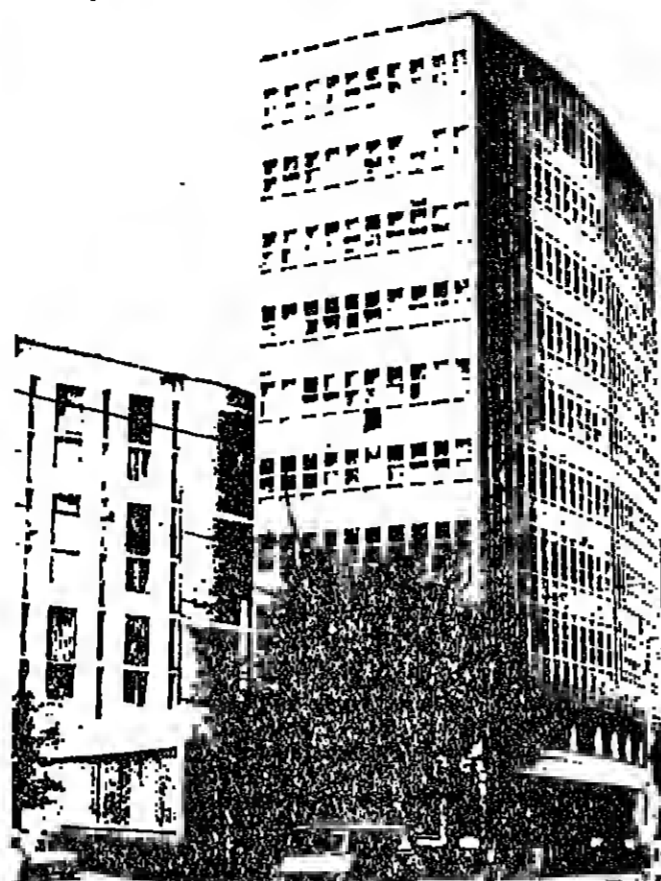
If, generally speaking, "man is the measure of all things" as Protagoras put it, we must stress that the quality of your products and the productivity of your labour are strictly conditioned by the use of MEASURING AND CONTROL APPARATUS.

The post- or in-process sizing of your products supplies you the information through which you can become EFFICIENT as a producer.

It is this efficiency (viz. quality, producti-

city, competitiveness) that the Fine Mechanics Enterprise (IMF) of Bucharest has in mind when offering its beneficiaries:

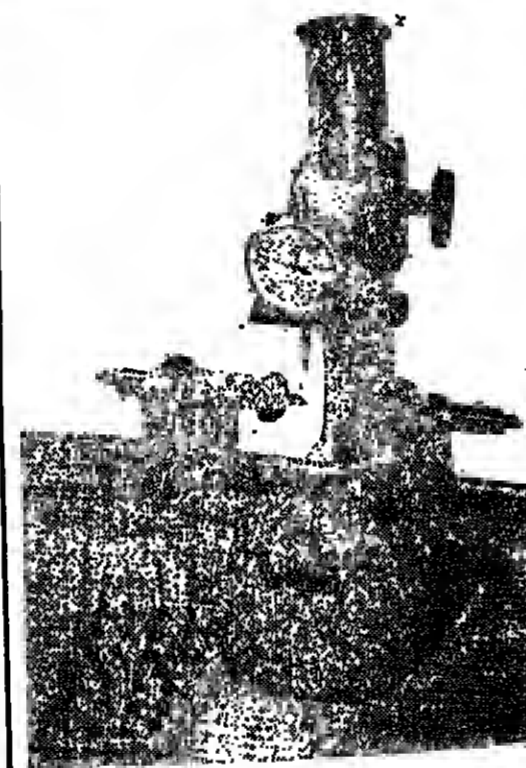
- measuring and control apparatus for lengths, pressures, temperatures, discharges, times and speeds;
- special tools (diamond and sinter-carbide metal tools), holders, high-accuracy and fineness devices and dies, having a high degree of productivity and durability.



## MEASURING AND DIMENSIONAL CONTROL APPARATUS AND INSTRUMENTS

- dial gauges ● bore dial gauges ● gear measuring instruments; ● threaded conic gauges for the oil industry.

- circular dial snap gauges ● gear pitch-error and gear-tooth-thickness measuring instruments ● reading ball-gauges; optical read-out devices and rules.

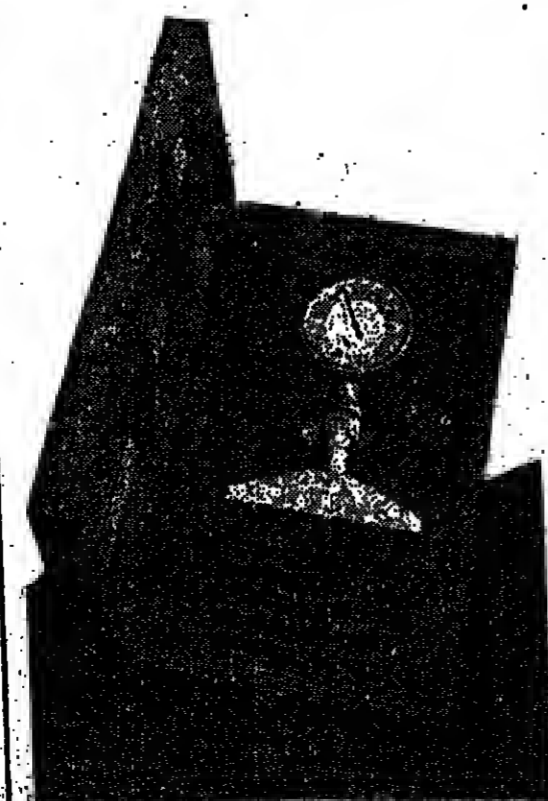


## AUTOMATION ELEMENTS AND MECHANISMS

- Programmers ● electromechanical pulse counters ● programme control for automatic washing machines ● discharge counters with oval wheels ● electromechanical tachographs for motor vehicles ● complex speed measuring installations for locomotives and subways.

## FOR PRESSURE INDUSTRIAL CLOCK-TYPE APPARATUS, INSTALLATIONS AND TEMPERATURE CONTROL

This apparatus family includes pressure switches and thermostats. They are indispensable in the automation of starting and stopping installations using fluids, whose temperature and pressure must be maintained within certain preadjusted limits. Pressure switches and thermostats are made of the Fine Mechanics Enterprise in a wide variety according to the features and conditions of the environment.



## IN- AND POST-PROCESS SIZING GAUGES

- They are built according to modern principles, with pneumatic inductive, piezoelectric transducers, whose signals are processed and displayed analogically or numerically in modular-type electronic units:
- pneumatic post-process sizing gauge — SUPERJET ● pneumatic post-process sizing gauge — ELSUPERJET ● post-process sizing gauge with electric contacts ● inductive electronic post-process sizing gauge ● roughness measuring post-process sizing gauge; smoothness measuring gauge (electronic levels).
- in-process sizing gauge for continuous exterior cylinder surfaces with one and two measuring points ● for continuous exterior surfaces and for continuous interior cylinder surfaces with two measuring points ● in-process sizing gauge for centreless grinding machines ● in-process sizing gauge for exterior diameters of narrow surfaces ● copying systems mounted on machine tools for processing through copying after a pattern.

# REMEMBER THE IMF TRADEMARK



## SINTER-CARBIDE METAL PRODUCTS

The main groups of products bearing the "CARME-SIN" mark — which are the object of the Bucharest Fine Mechanics Enterprise's production programme — are the following: sinter-carbide metal brazable tips and inserts for metal cutting; sinter-carbide metal inserts for mining tools; sinter-carbide metal inserts specific to the wood industry, building materials and extraction industry; products for drilling installations; dies for screws and nuts; dies for roll bearings; other types of products upon the foreign partners' demand.

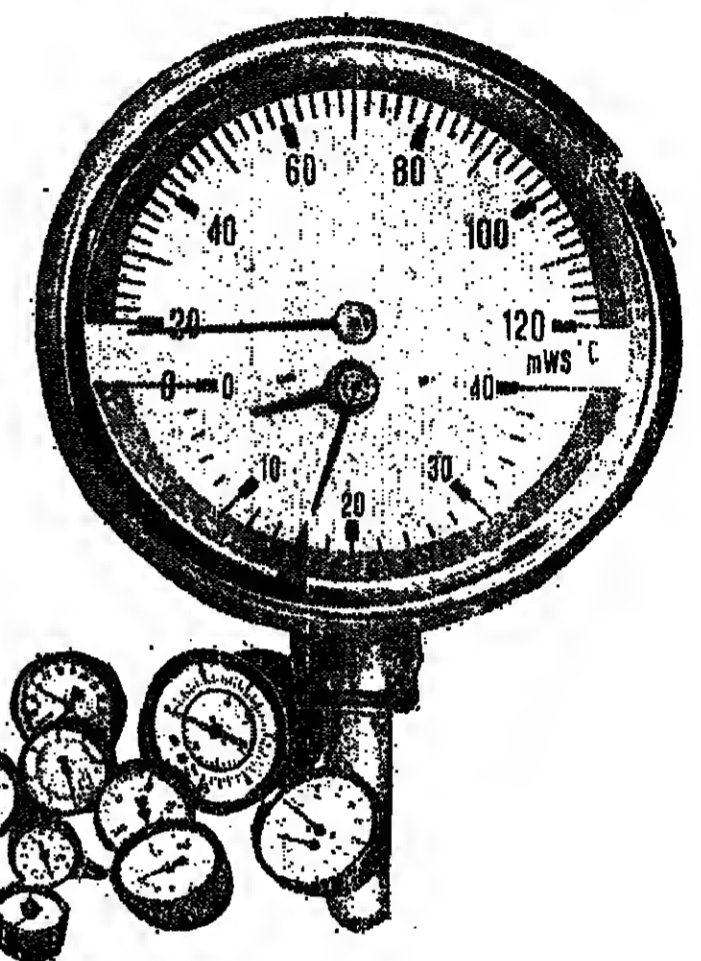
According to the concrete destination indicated by the end user, these products are executed out of the PKMG groups of carbide metal powder, after ISO international standards or according to other requirements specified in the order.

In order to increase the durability and performances of the sinter-carbide metal inserts, the method is applied of coating them with extra-hard layers of titanium carbide, giving the inserts an increased durability of up to 300 percent, as compared to the normal execution.



## PRESSURE GAUGES

Through the great diversity resulting from constructive variants based on measuring limits, accuracy, diameter, connection and scale type, the Fine Mechanics Enterprise can satisfy the most exigent demands of its clients (standard pressure gauges or of special construction, upon demand). There are: ● general use industrial manometers ● vibration-proof manometers ● corrosion-proof manometers ● capsule-manometers ● double indication manometers ● manometers-thermometers.



## DIAMOND TOOLS

The processing of ferrous and non-ferrous metals, of sinter-carbide metal, stone, concrete, ceramic and glass — through modern methods — calls for the use of diamond tools on an ever larger scale.

The manufacturing programme of this kind of tools is achieved at IMF on the basis of the licence purchased from WINTER firm of West Germany and is currently in full swing as a result of the growing demand. It comprises the following more important groups:

- diamond mills with metallic or res-

inous binder of various shapes and sizes, with cubic boron nitride.

- diamond tools for construction-material processing
- diamond tools with galvanic binder
- honing diamond blades
- diamond pastes
- diamond tools for trimming and shaping abrasive stones
- chamfering tools with extra-hard materials from diamond polycrystals or cubic boron nitride
- diamond drawing dies.

## AND THE EXACT TIME

WHICH YOU CAN LEARN AT ANY MOMENT BY LOOKING AT THE DIAL OF THE WATCH WHOSE TRADEMARK OREX IS A GUARANTEE OF ACCURACY, BUILT IN SEVERAL HUNDRED MODELS BY IMF, THE WATCHES — MECHANIC OR QUARTZ-BASED ANALOG — MEET THE FINENESS OF YOUR AESTHETIC TASTE AND GIVE YOU THE EXACT TIME.



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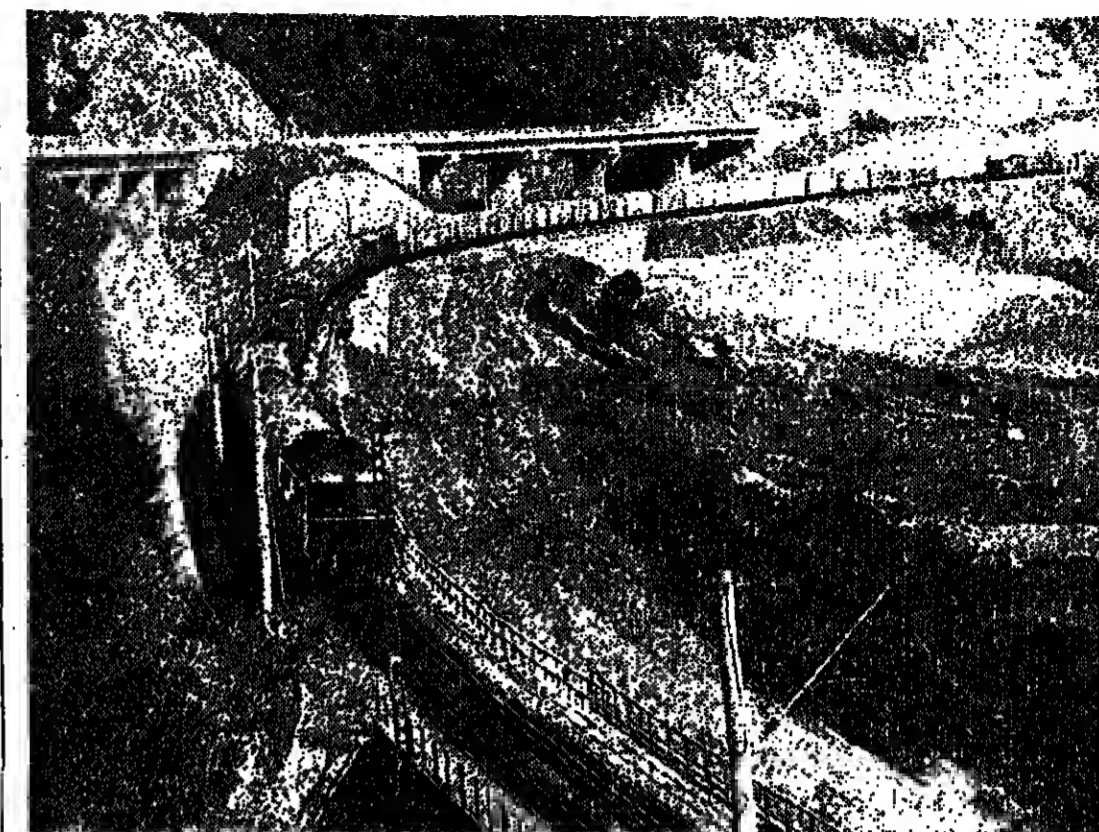
This episode was not unique in the construction of the railway network. Deplorable effort, the country's heritage of inappropriately built lines, badly chosen routes, works left uncompleted because of unfavorable circumstances, technical deficiencies, and inadequate natural elements was quite large.

The progress made in Romania's general economic development of the last two decades has made it possible to achieve railway projects which had long seemed impossible, from a point of view of investment and construction.

The Inhabitants of the Mofl Land did not have a railway connection with the rest of the country until 1878. Steel rails had started being laid out between Dava and Brad in 1939 but the project was soon abandoned to be resumed in 1942

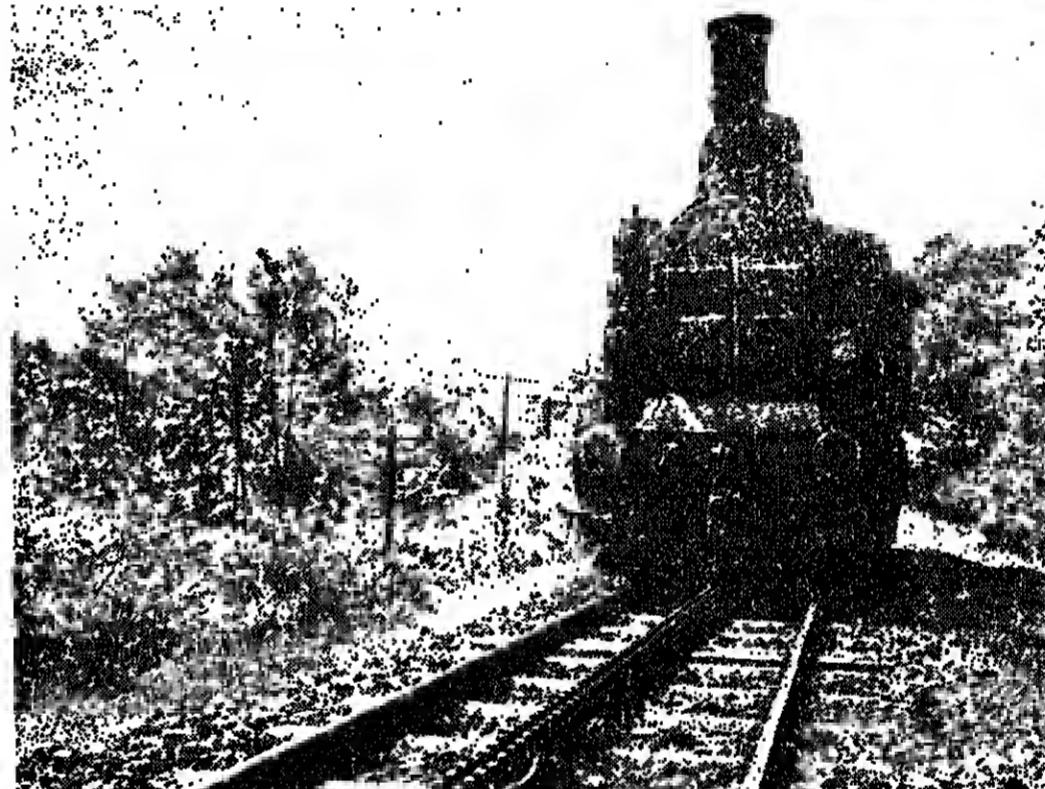
and then in 1980 when the Mila-Stonessa and Nord-Donau Foll ceds of Iloz adding up to 22 km were built, 13.5 very different, the hill had to be laid out. It was cut down when, hanting by mecha- installed and original geological solutions buld- hoaling rich and solid ed on the oncoly's great con- sruition sites managed to lay the track in the hard rock of the hills. After nine years dur- ing which more than one mill- ion cubic metres of earth were excavated, the walls of the concrete were poured and tens of thousand tons of con- crete and reinforced concrete were poured. The 13.5 km of the km still missing from the Nord railway finally sared revellers and goods the 280-km distance. Of this short distance 70 km to 100 km tunnels were built. The beauty of nature seemed unavoi- ably. At the end of 22.8 km there appeared a small

On page 8: Specol waggons carry the export-bound Romanian cars (top), the lost checks before leaving the depot (middle), a first class passenger waggon (bottom). On page 9: A railway edifice in Mohedint county (top), a rock engine which conquers up old memories (middle), the railway stations of Tulcea and Constanța are remarkable by their modern architecture (bottom).



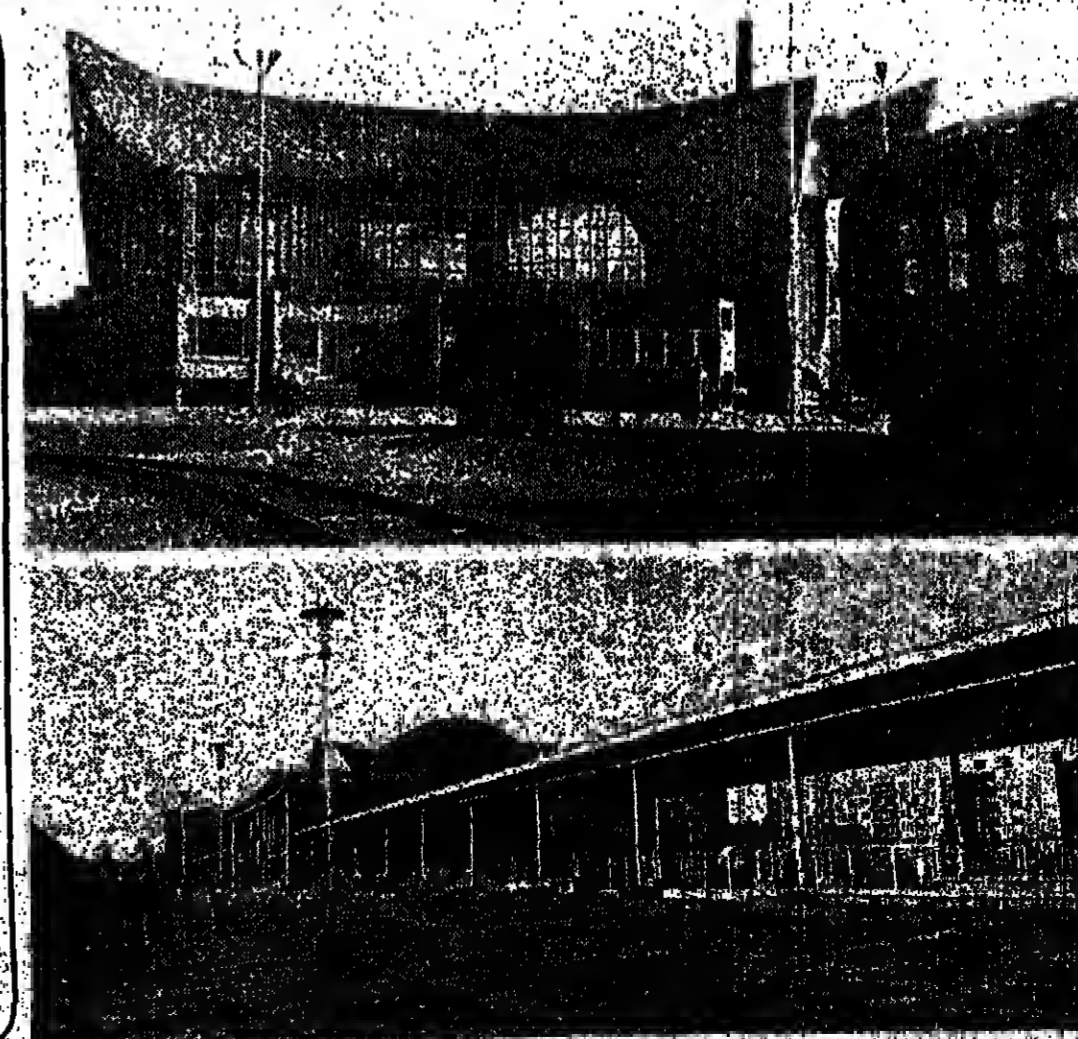
Transports play the role of a "circulatory system" in the country's economic and social life. Depending on the smooth running of conveyance means are the effective supply with raw and subsidiary materials of all economic units, the uninterrupted flow of products meant for the domestic market and for exports, the flow of mineral goods destined for the country's consumption. In the unitary national system of transportation, the railway holds the largest share, meeting most of the needs of freight and passenger transportation. Last year national transportation recorded a volume of 2,821.1 million tons of goods and about 60 billion passengers-km. Railway transportation has been developed and diversified in keeping with the growth of the national economy. The locomotives and cars currently in service secure a low consumption of fuel and energy and allow of applying the most complex systems of loading-unloading operations, being perfectly adjusted to combined transportation flows. Railway transportation is currently the cheapest means of conveyance, accounting for a reduction in shipping expenses in the overall production material expenses on the social product.

The existing rolling stock will be added big-capacity cars and cars for transporting materials, semifabrics and finished products to the country's construction sites.



The railway is currently the main means of inland goods transportation. The material base of railway shipping is becoming continuously enriched with Diesel and electric locomotives and freight cars. Until 1990, the rolling stock is to grow by another 80 electric locomotives and 13,377 freight cars. Also pursued is the growth of the rolling stock usage indicators, the mechanization of loading-unloading operations, the expansion of containerization and transcontinentalization, therefore the elimination of "warehouses on wheels", the growth of commercial speed, the full utilization of the railway transport capacity, the diversion of goods from roads to railway shipping. Construction-assembly investments are directed towards ensuring new, more diversified transportation ways: solving fuel, coal and raw materials; law materials; law materials. Consequently, the new railway for fuel coal conveyance will provide the most efficient link between coalfield and thermal power stations

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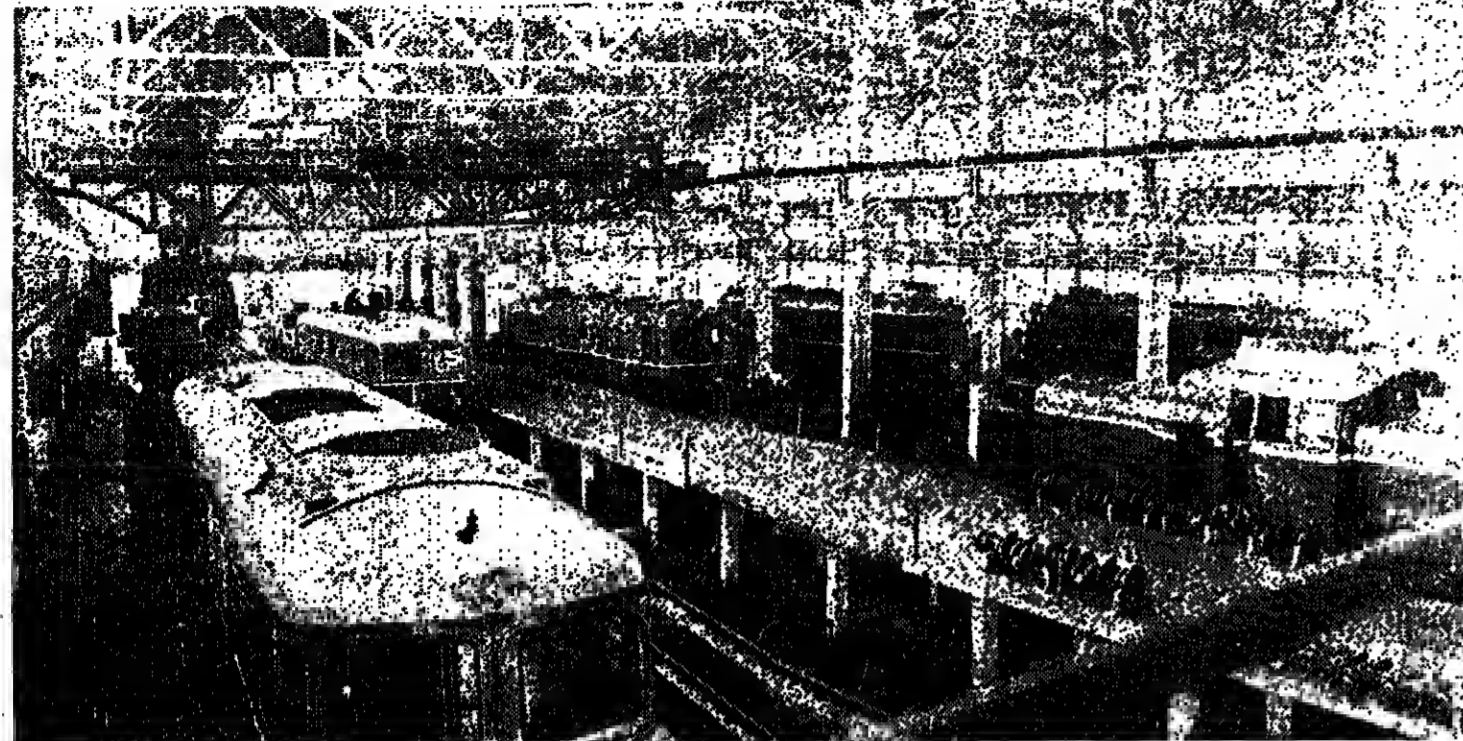


keep count of the measurements they had to take with the theodolite, as the ground was changing from day to day. Nature eventually yielded and for a year now two pairs of trains carrying passengers and two trains loaded with goods have been travelling on the Devanahalli route every day, linking the Moll Lend to the coccoiry and fulfilling an old dream.

March 1936 marked the completion of the structure works on the greatest railway art project in the country, on the line connecting Vilcojo to Rihonvill Villavieja. The "Suroeste Railway", as builders call it, there are 10 viaducts, two large steel bridges, across the Araya and the Olif, 128 foot-bridges, nearly 12,000 supporting beams. Recently inaugurated work, the viaducts are 100 to 150 meters high (50 m above ground) and longest (1,350 m) viaduct is this country, hitherto, unsurpassed by anyone, there are thousands of square metres of consolidations, earthworks, ditches, millions of cubic metres moved around. The work programme by the end of the year, the high speed allowed for launching the last predestinated concrete beam weighing 280 tons.

These pages of railway construction history would have been impossible to write if Remonte had enjoyed the economic might enabling it to approach its major technological, the most sophisticated metallurgical, engineering and industrial works of remodelling nature, just a ambitious and tenacious export turning dreams into reality.

## Conclusion

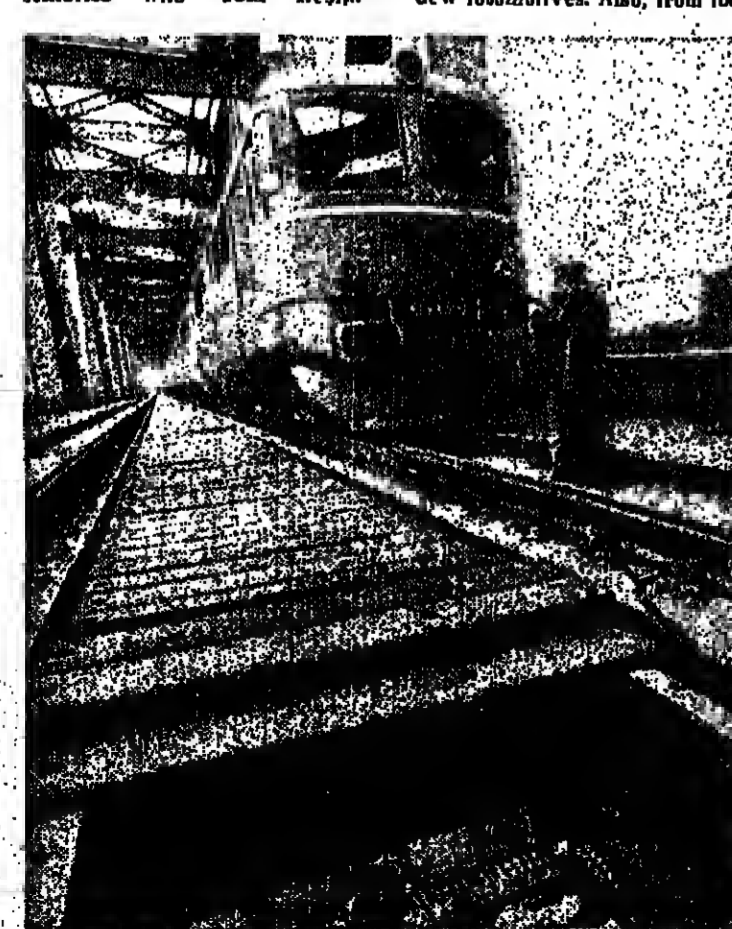


- The first railway to Romania started to be built in 1870 between Gravel and Buzias (12.5 km), was completed in 1874 and opened in 1880.
- On October 31, 1900 was officially inaugurated the first railway in the Carpathian Principalities, stretching between Bucharest and Giurgiu (100.4 km). The first train left from Filaret station (Bucharest) at 10.45 and arrived in Giurgiu at 12.15.
- The first narrow-gauge locomotive ends in Romania (in Reghin) was put into operation in 1878.
- The Buzias-Matassi line was the first railway built by the Romanians with Romanian engineers (1881).
- 1926 was the year when the first standard-gauge locomotive made in Romania was delivered to the Romanian Railway Management.
- The first electric line, running between Barbu and Buzov, was opened in 1908.

## HOW TO GAIN SPEED

A locomotive placed on a platform pulled by a convoy of several pairs of oxen went to the information exhibition organized in Vienna in 1873. It was the first locomotive built in the Reghin works, with a power of 45 hp and a maximum speed of 25 km/h. More than a century after this event, a collection of Romanian researches achieved in the electric machines lab at Timisoara the model of a vehicle on magnetic cushion meant for suburban transport whose prototype Magribus 02 has a capacity of 60-80 persons and a speed of 300 km/h.

How did the rolling stock of the Romanian Railway Company evolve in the period between the two events? Steam locomotives were built at Reghin works and Malaxa works in Bucharest around the 1930s. With various improvements they reached the 150,000 serial number. But steam traction gave way to traction systems with higher efficiency: Diesel (1938) and electric (1963). The first Diesel-electric locomotive (D-Co) of 2,100 hp which equipped the locomotive depot of the Romanian Railway Company (CFR) were made by "Electropulver" Works in Craiova, based on a Swiss license. At present, Diesel-electric and electric locomotives have been completely assimilated in the Romanian production and are exported in a large number of countries in Europe, Africa, Central and South America, Asia.



economic point of view, wagons were not ill. Most of them on two axles, had a small capacity (10-15 tons) and did not allow the mechanization of loading-unloading operations. The number of cars specialized according to the nature of goods was also limited, being oriented toward animal and cereal transportation. In 1900 a daring programme began for the equipping of the car depot. Newly designed cars were homologated. They were metallic, with axle boxes on bearings, big capacity axles (20 tons), suspension redimensioned to the loading needs, big capacity roller buffers, a modern braking equipment and the most important, a unified one allowing the use of long trains and braking according to parameters imposed by the locomotive. In order to achieve these mechanical component parts specialized units have been built and commissioned in Romania: the bearing factory at Birlad, the axle bogies and wheels manufacturing factory at Buz, Assisted by these technologies using special steels. Over the same interval factories specializing in the construction of wagons have been brought into operation at Drobeta-Turnu Severin, Cernesti, while the plant at Arad has doubled its capacity.

Launched has been the series production of completely new freight cars for 60-1 heavy axles supplied with a self-unloading system through the floor and of the metallic covered wagon on 60-1 heavy axles. In parallel the production of cereal wagons has gained momentum. One of the first was a wagon designed for the transportation of cement on two 27-1 heavy axles, provided with an efficient system of loading by gravitation from silo and pneumatic unloading, as well as the refrigerator car on two axles. The development of the Romanian chemical and petrochemical industry required the fabrication of oil tankers, fuel tankers, etc.

Locomotive overhaul room (top), the first railway tests (bottom), unloading the containers (middle).



In the light of the Programme of research, prospects and forecasts concerning the development of science, technology and technical progress in transport over the 1980-2010 (2020) period, the Romanian Institute of Research study the most advanced technical and technological solutions in the field of railroad transport. Specialists and researchers have in view the realization of new types of locomotives, engines, goods and passenger cars with higher technical and economic performance. Construction are envisaged (related to the installed power) by using aluminium, glass fibre, etc. execution of the locomotives' box, light maintenance. As far as passenger cars are concerned, there is a trend of reducing the aerodynamic resistance and the effects of aerodynamic perturbation (increased) in the comfort offered to travellers.

## PRIZE FOR MEDICINE

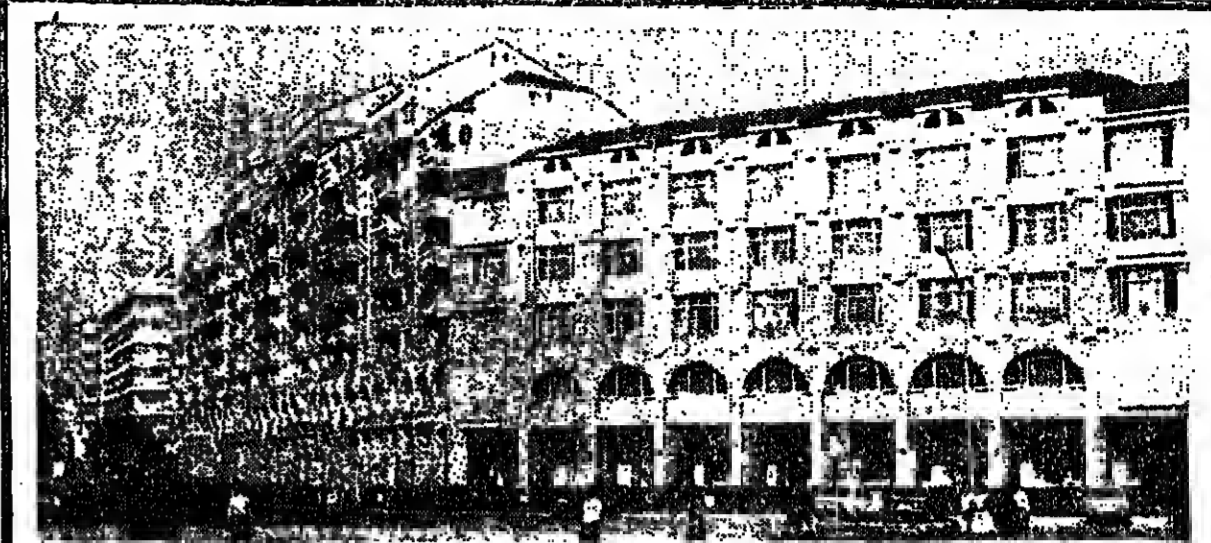
The proceedings at the 13th International Congress of Gastroenterology and of the 6th European Congress of Digestive Endoscopy recently held in Rome were also attended by Romanian physicians.

After listening to the 1,183 scientific reports and papers delivered, the jury awarded the Prize of the Congress to the work "The Treatment of Duodenal Ulcer and Ethoxysulamide (Ulosoal) (E)". The work is the synthesis of a multidisciplinary study undertaken by a team of Romanian physicians headed by Ion Popescu, MD, head of the Centre of Research in Gastroenterology Problems in Sibiu (Sibiu), director of the town hospital in Zlatu (Sibiu county).

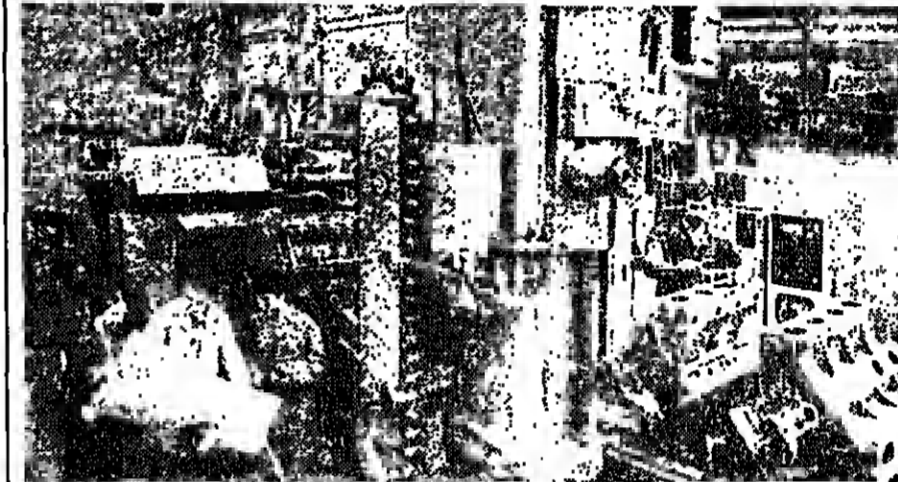
## MINING TECHNOLOGIES

In the black coal mines in the Jiu Valley where no mechanized complexes can be introduced, a front gallery support technology has been adopted. The technology adopted (for thick bedded coal) consists in the setting of an artificial top of supporting elements. This technology allows safety and basis productivity up to 10-15 tons of coal per workday, compared to the 1 ton broken down on the old technology. The new technology is already being applied in 45 Jiu Valley mines.

The flotation line was started up at the new oilseed crushing plant in the town of Urechea, Jiu Valley. This technological line which comprises equipment manufactured by the Romanian industry, covers the line coal grains, increasing by 2-3 per cent the degree of utilization of the oil extracted. The technological line for excavation and transport was recently put into operation at the Ploiesti quarry of the Ploiesti mining enterprise, the youngest within the Romanian mining works. It is equipped with a giant relay excavator EHC-1400 which excavates more than 1,500 cubic m. in 21 hours. The quarry's capacity has been put at 3 million tons of coal annually. For the first time in Romania, the over 10 m high handgare of the relay hauling machine at the Valea de Buziu mine within



Tirgoviste municipally, the old "princely residence" of Valachia where important events of the Romanian history took place, which became county seat (Dinamo) after the 1900 administrative-territorial reorganization stands out as a town with modern architecture benefiting by all breakthroughs of civilization, having a flourishing economic, political, social and cultural life. A republican level steel centre where special and high-alloy steels are produced, Tirgoviste enriches every year its construction dowry with new industrial areas, new living and commercial areas, with wide boulevards and rest and recreation parks. We reproduce in the above photo one of the architectural land scapes significant for the town's new look.



## BIG CAPACITY COMPRESSORS

Big capacity compressors D-120 and D-130 have recently entered series production at "Zimpori Noi" Enterprise in Bucharest. In the above photo, an aspect from the governing section of motor blocks and compressor cases by means of the recently commissioned digitally controlled automatic guiding centre CPN-2.

## POTATOES GROW IN SAND

An average 15,000 kg-per ha production of early potatoes is satisfactory over an extremely favourable climatic conditions. The potatoes research and production station of Miercurea, Dol county, scored this year an average crop of 15,150 kg per 400 sq m of sand, where the humid conditions frequently fail to reach at least one per cent. Smaller areas yielded even 25,000 kg of early potatoes per ha. Ten years ago large areas of sand laid waste, without use. Presently early potatoes are expanded throughout scores of thousands hectares. The research station of Miercurea improves technology, establishes the best rotation of growing, fertilization regimes and irrigation methods.

## SYNTHETIC FIBRES AND YARN

The Săvinești Synthetic Fibre Plant produces, among other things, installations of spinning synthetic fibre and yarn enterprises in Cluj-Napoca and Vaslui, polyamide and polyester fibre enterprises in Roman and Carahia. In the photo below, an aspect from the workshop lab for the synthesis of the research centre for synthetic yarn.



## LABORATORY FOR SEEDS

At the research and production station for sugar beet cultures in the town of Roman (Neamt) county, conditions of increasing this industrial plant's productivity are studied in lab. In the above photo, the plantization room where seed sprouting is observed.

## WIND-POWER PLANTS

Five university chairs of the Polytechnic Institute in Timisoara, bringing together professors and students within a large multidisciplinary team, developed the power plants in this country. The new type of wind turbines which have recently started being mass production of blades whose resistance has been calculated as to cope with any type of strong or wind speed, even with gusts of wind likely to occur once in 100 years. It is noteworthy in the fact that the blades of the Romanian turbines, though having the same installed power, weigh by 200 kg less than those manufactured by reputed firms basing a long tradition to this field from technologically advanced countries building wind power plants in the world as regards the wind power production. The installation, of great technical finesse, basing on the use of advanced construction, are currently being mounted on Samolod Model, they have an installed power ranging between 300 and 450 kw.



## THERMAL ENGINES

The Romanian car-making industry upgrades its engines. A series of new, improved engines have already been created for Dacia. One of them is a Romanian-made integral engine, quite different from the Renault 11-engine. It will lay at the basis of a new generation of engines and cars boasting a notably higher quality. The 1100 cc motor cars will be provided with engines perfected as concerns both the fuel consumption and the considerable reduction of polluting gas components. Almost finished are research and development of Diesel engines at 4-6 cylinders which will be incorporated in ARD vehicles, provided with new solution to speed, spark ignition, engine. Homologated are now a special equipment for the participation of pollution control, as well as improvement in lighting and engine control systems.

## EXPORT CONTRACTS

The absorption rate of the above photograph on the loading and delivery railway platform is not a foreign customer, is the sixth product of the kind (finished), with export contracts by the workers, technicians and engineers of Buzia Technological Equipment Enterprise. Last month promising results, export contracts were delivered to foreign partners. Final design were delivered to the competent application of industrial flows of modern cutting and welding technologies which led to exceeding by 10 percent the planned internal and export production.

## "CORSTAR" ON LAND

We are now passing through the Bosphorus strait. Then through the Gibraltar. We can also reach the English Channel. In front of us there is a radar equipment helping us find our position. But there are no sea waves hitting the ship because we are on land. Actually, it is a radar simulator for navigation at sea.

The images we have just seen are fragments from programmed lessons. A single programme can cover as much as 40 subjects, indicating also the difficulty of the exercises designed for training deck officers to decipher the radar and handle the ship in different situations and areas of navigation.

The sea navigation radar simulator called CORSTAR is a recent creation of a collective specializing in naval engines, headed by engineer Doru Dumitrescu.

Trainees have at their disposal an anti-collision radar, a switchboard and a chart desk in order to pick up all necessary data, take the boat manoeuvring decision and carry it out. The instructor has the possibility to supervise on a display the exercise by watching the navigation zone with all the ships existing in that area thus

being able to change the moving elements, with a view to setting up conflict situations, according to the lesson's theme. The trainee's manoeuvres and errors are signalled on the display as soon as they are committed. Thus they can be analysed at the end of the lesson, or even immediately by interrupting it.

Designed jointly with the expertise of the Computer Technology and Informatics Institute, the simulator has been ordered by the Sea-Going Fleet Exploitation Enterprise (IEET) Navrom in Constanta, Romania's largest port.

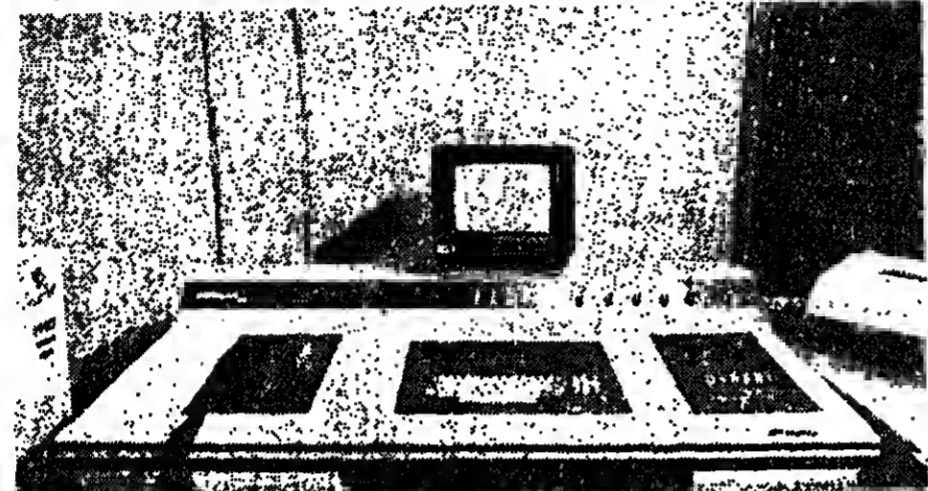
This sophisticated equipment answers to the needs and recommendations of the International Maritime Organization regarding the training, their level being attested through the granting of internationally recognized certificates.

The same team of researchers are currently busy with building a radar simulator meant for river navigation.

MARIAN COSTIN

## MOTORS FOR POWER STATIONS

The Enterprise of electric machines of Turin, Magurele manufactures, among others, new types of three-phase, asynchronous electric machines with short-circuit rotor, with powers ranging between 250 and 1,000 kW. According to a priority programme, these products are destined for power stations in the country. At the same time stipulated is the commissioning of units offering the possibility of expanding the line of electric motor needed by the national economy.



## "MINICOMP" IN SCHOOLS

In the MINICOMP experiment, the well known computer circuit for children, all first grade students of General School no. 17 in Bucharest were included last year. Two informatics circles with

students of the 6th-7th grades were also created at the same school. The meetings of the circle being held weekly, informatics lessons are taught by instructors of the MINICOMP circle and are an occasion to familiarize not only the school's students but also the teachers with electronic computers. The Scientific Research and Technological Engineering Institute (CSUT-TEI) which coordinates the MINICOMP circle has the necessary equipment of the disposal of School no. 17.

M. MILENA



## UNWOVEN FABRICS

According to estimates, the share of unwoven fabrics in the world textile production will grow from five per cent in 1970 to some 14 per cent in 2000.

Several industrial units have been built in Romania in the last two decades for the recycling and reutilization of textile waste of big enterprises in the field. These projects have been stepped up in the last five years. In parallel to the designing and introduction of new technologies, research has also been diversified in the utilization

of unwoven fabrics. While in the beginning they were almost exclusively used in the ready-made clothes industry, today a number of such products are demanded in other branches too: in the building (especially in the auto and truck industry), agriculture (seed improvement in particular) etc.

One of the most important units of this kind in Romania is the Netez, which was set up in the early 1980s in the town of Bistrita. Some 60 per cent of its woven products are in the light industry, particularly the garments one. A wide range of items is supplied to the garments and textile factories in Bucharest (DITB), Satu Mare (Mondiale), Baia Mare (Mondiale), Galati, Oradea, Odorheiu Secuiesc.

In the near future, the Netez will be supplied with a line for the production of non-woven fabrics, which will be used for the production of other textile products. This is one of the main tasks of the enterprise.

As a part of these changes, the Netez has been equipped with a line for the production of non-woven fabrics, which will be used for the production of other textile products. This is one of the main tasks of the enterprise.

## NEW PRODUCTS

The hydraulic tools and equipment enterprise of Ploiesti has assimilated tools, accessories for competitive machine tools, measuring systems, highly-automated instruments.

Photo: a new line of boring and cutting machines processing complex dies for hydraulic devices and installations.

As a matter of fact, new elements for the automation of technological processes and new methods of manufacturing hydraulic equipment are about to be assimilated in the enterprise, as a result of which its products will earn the end users' appreciation.

M. CONSTANTIN

## 200 TYPES OF CABLES

Over 70 per cent of the output of conductor and insulated cables of the enterprise of electrotechnical products of Iisiteia is bound for export. The quality of the construction and of the execution has imposed them on the markets of Czechoslovakia, West Germany, Yugoslavia, Poland, People's China, Albania, Egypt, Brazil, Morocco, Sudan, Iraq, etc.

Turned out in almost 200 types, the cables are mainly used in the construction of aerial network for the transportation of electric power. At the same time they are used in a series of mobile equipment (cars, trams and ships) and in distance-signalling installations.

C. MARIAN

## WHEN OBSTETRICIANS GET TOGETHER

Between October 20 and 21 Satu Mare town hosted the proceedings of the national meeting called "Infectious Syndromes in Obstetrics". Staged by the Union of Medical Sciences Societies the meeting was attended by doctors from specialist clinics and researchers from the main university centres of the Romanian state

of medicine (Bucharest, Timisoara, Cluj-Napoca, Iasi, Tirgu Mures, Craiova), as well as specialists from other cities. Many scientific papers and discussions occasioned by the meeting turned into a useful exchange of opinions and experience on the treatment of certain diseases with a high coefficient of recovery.

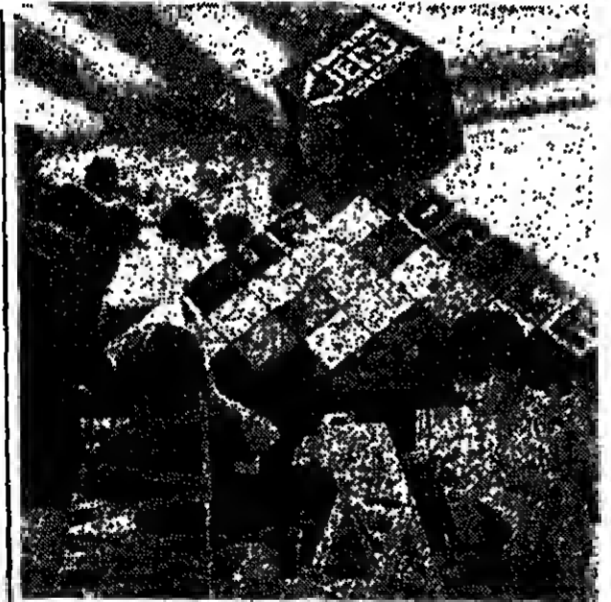
M. MILENA

## LOGICAL GAMES

Did you know that games are governed by a science of their own? It is called ludology, now a subject to many doctoral papers. Games and toys are not made at random. Their creators aim at stimulating children's initiative, creativity, social, independence of acting and thinking to develop their spirit of collectivity.

A real industry of games has been developed in Romania. The RECOOP educational enterprise has released a large series of logical games under the emblem of RECO (educational-collective games). A team of people specializing in logical games, designers of models, collaborating with a large number of black-and-white artists, mathematicians, psychologists, teaching and medical staff, proposed 676 titles of games. They scored a great success. Over 500,000 copies have been sold in pre-school children and students.

A new science which has revolutionized the 20th century — informatics — has left its imprint on games, too. Intelligent games are beginning to take the place of traditional ones. Already known games as well as other original forms of play-log, are now part and parcel of software of computers which have turned into intelligent playing mates. Computer games can involve one's skillfulness, relying on reflexes, fast decisions, or the ability to drive cars or flying apparatuses, to move along labyrinths with unexpected obstacles, adventures, etc. It seems that computers

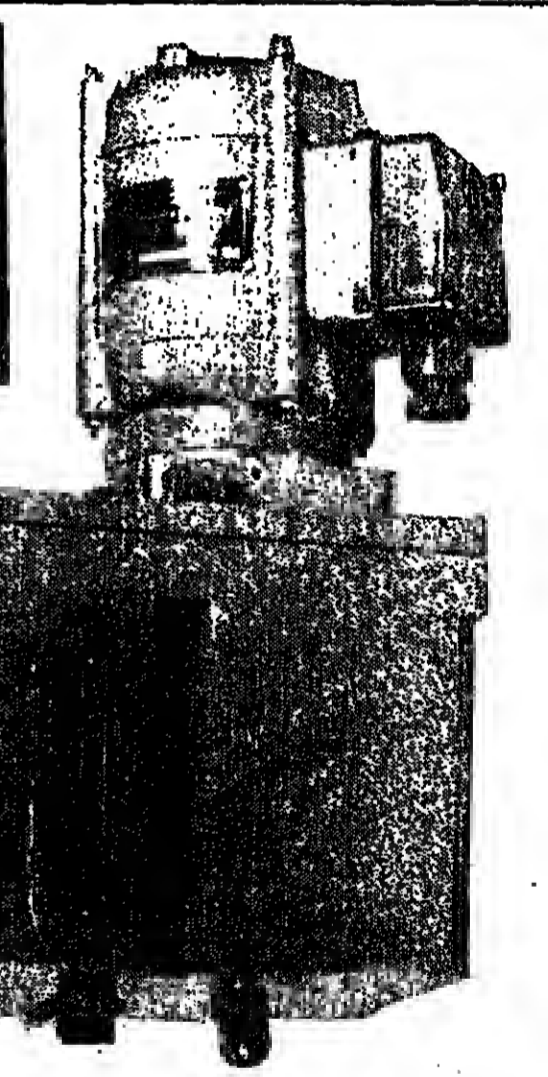
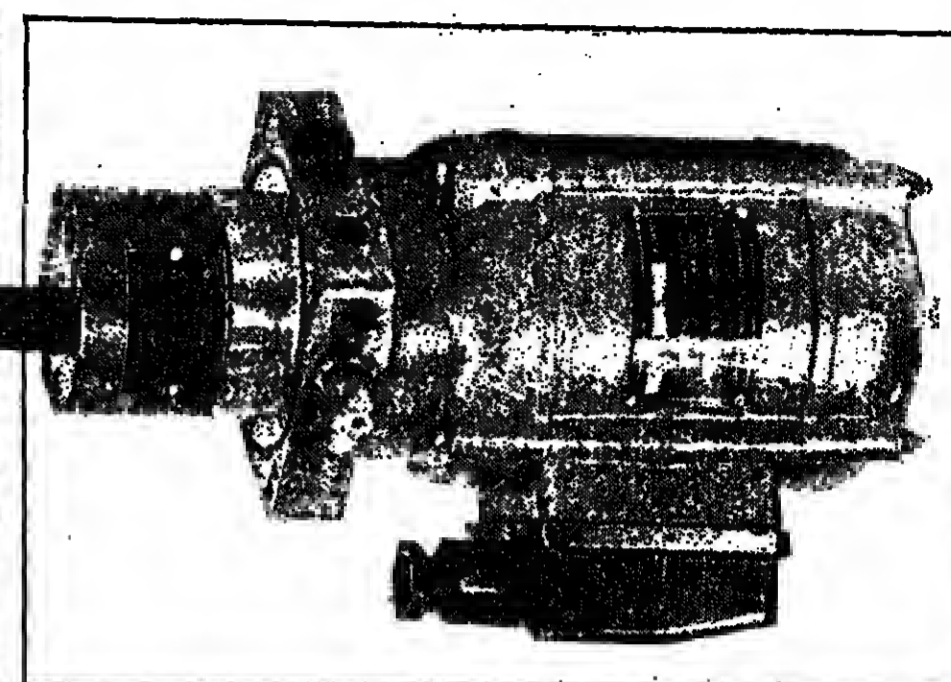
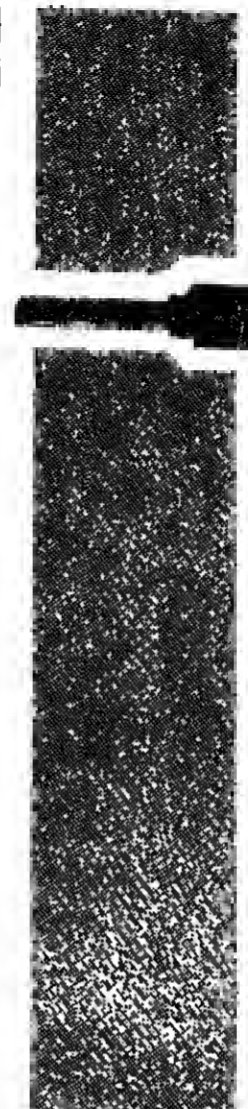
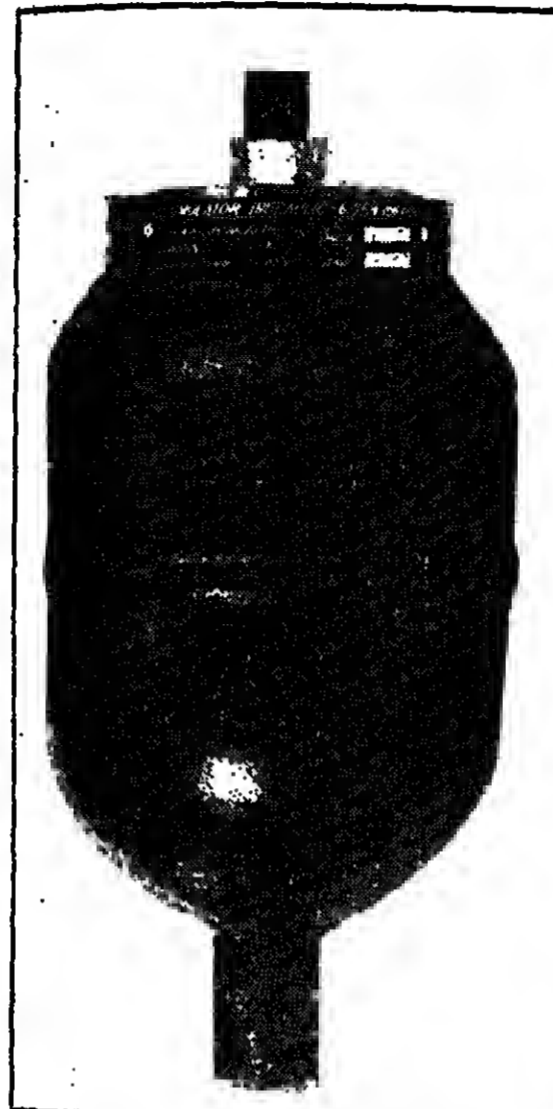


MILENA MIHAESCU



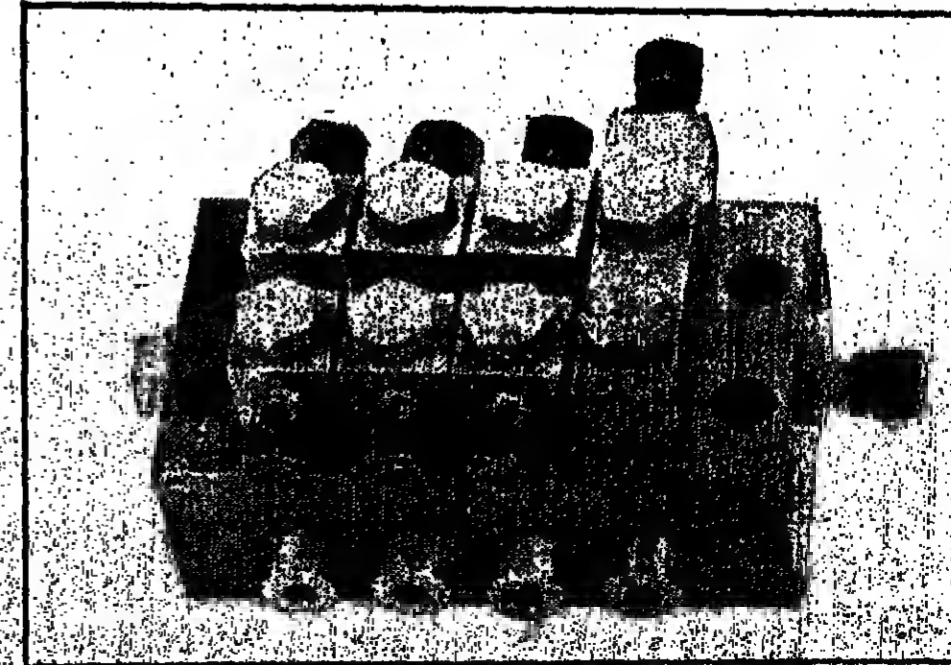
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## EXPERTS AFFIRM THAT THE I.M.B. PHARMACEUTICAL PRODUCTS ARE RECOMMENDED FOR THE MOST DIVERSE THERAPIES BECAUSE OF THEIR INCONTESTABLE EFFICIENCY

The great achievements of our firm, the Bucharest Drug Enterprise (IMB), are due to a remarkable technico-scientific and productive potential consisting of scientific research sectors (which closely collaborate with specialized institutes in Romania), ultramodern laboratories and installations boasting great productivity and a high technological standard such as those for extraction and purification, electronically controlled technological flows and advanced, highly competitive methods. A steady activity in the field of drug production engineering and technology is carried on at IMB, which guarantees the superior qualities and therapeutic properties of the IMB drugs. As a result, the 620 pharmaceutical products made by our enterprise have thoroughly imposed themselves in the markets of over 50 countries among which England, Austria, Czechoslovakia, People's China, Denmark, Switzerland, Finland, West Germany, Italy, Japan, Poland, the USA, the USSR etc.

those who handle various installations.

**PIRIVIN.** The product is presented in phials containing 20 compressed tablets containing 100 mg pirivital (mellorates the use of glucose by the nervous cell), 10 mg vincamina (adapts regional blood flow and uses circulating oxygen in cerebral metabolic needs) and 25 mg pyridoxine hydrochloride (improved oside-reduction processes, being implicated in the metabo-

**METRONIDAZOL** 0.5 percent solution. It has two types A and B, both being presented in phials of 200 ml perfusion solution administered intravenously to adults and children (12 years old and over) through perfusion of 100 ml solution for 30-60 minutes at 6-8 hours interval. Type A contains 0.500 g metronidazole, 5.47250 g pharmaceutical glucose 0.02587 g sodium chloride, 0.2487 g hydrochloric acid 0.1 N and distilled water. Type B contains 0.500 metronidazole, 0.780 g sodium chloride and distilled water. Metronidazole is an excellent antibacterial drug recommended in serious infections owed to anaerobes, being very active against these bacteria with or without associating other germs. With an excellent tissue penetration, being absorbed at liver level.

OTHER IMB PRODUCTS SOLICITED ON THE WORLD MARKET

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IMB's range of drugs of organic synthesis and of conventional products - from tablets and gelatinous coated tablets to plasma substitutes and veterinary products - is too wide for us to be able to present them at large. However we shall mention:

**ANTIMICROBIAL AND ANTIPARASITIC MEDICATION:** antimicrobial antibiotic and chemotherapeutic products, tuberculostatic, antimycotic, antiamoebic, antitrichomoniasis, antihelminthic, antiseptic, disinfectant products; • **MEDICATION OF NEOPLASTIC DISEASES** (cytostatic and hormonocytostatic) • **MEDICATION OF THE CARDIO-VASCULAR SYSTEM:** cardiotonic, antiarrhythmic products • **METABOLIC:** water-soluble vitamins; anabolizers tonic, trophic solutions for infusion • **MEDICATION FOR THE CENTRAL NERVOUS SYSTEM:** hypnotic drugs, sedatives, neuroleptic drugs, tranquilizers, antidepressants, analgesics, antipyretics, central excitants • **MEDICATION OF THE AUTONOMIC SYSTEM:** sympathomimetic drugs, parasympathomimetic drugs; parasympatholytic and spasmolytic drugs • **ANTI-RHEUMATIC AND ANTI-MALARIA DRUGS:** produced through synthesis • **ANTI-ALLERGIC AND ANTI-HISTAMINIC DRUGS.**

IMB's great scientific and technico-productive potential helps it to cooperate with specialist firms guaranteeing the fulfillment of its obligation in irreproachable conditions, in the context of obtaining mutually advantageous results. An eloquent plea for this assertion is IMB's cooperation with many famous firms, such as CIBA-GEIGY (Switzerland); Ludomil • SANDOZ (Switzerland); Tarecan, Tavegil • BAYER (West Germany); Trasylol • ROGER BELLON (France); Collimycine • RHIZER Inc. New York (USA); Falsign.

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**LUDIOMIL.** It comes in bottles containing 20 compressed tablets of 75 mg or 25 mg ludiomil hydrochloride each, respectively. The preparation is an antidepressive which efficiently combats anxiety, irritability, agitation, psychomotor inhibition, psychosomatic and somatic disorders, as well as the disorders accompanying psychic depressive states in children and adolescents (periodical, cyclic, tardive, organic exhaustion, symptomatic etc.), apathy (especially with older people).

**LUDIOMIL** is orally administrated daily in single or fractioned takings to patients in serious states or hospitalized: 150 mg (in the evening) the respective dose determining in the second week of treatment an equilibrium of blood concentrations of 100-400 mg/ml - or 30 gm three times daily. EKG control is recommended for patients with cardiopathies or elderly patients; patients with hepatic renal affections, glaucoma and prostate affections should be prudent; attention should be paid to administering the products to drivers and

lism of proteins, lipides and glucides). Pirivin is a neurotonic indicated to sportsmen, increasing their resistance during physical and psychic strain in training and competitions, for students during exams, the medicine having stimulating effects on attention and power of concentration and in general in cases of memory disorders and emotional instability. Other pharmacotherapeutic applications: states of asthenia, convalescence after diseases especially with children (flu, measles, hooping cough, etc.) in neuropsychic deficiencies with children, in cases of cerebral atherosclerosis, in some hearing troubles.

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